

# Waste Data System User's Manual

U.S. Department of Energy

Revision 2

November 2010



This document supersedes DOE/WIPP-09-3427, Rev. 1.

Waste Data System User's Manual

Revision 2

CBFO Approval:	<u>Approval on File</u>	<u>11/18/10</u>
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## **ACRONYMS AND ABBREVIATIONS**

AFGC	allowable flammable gas concentration
AK	acceptable knowledge
Be	beryllium
BIR	Baseline Inventory Report (also known as TWBIR)
CBFO	Carlsbad Field Office
CH	contact-handled
CHTES	CH-TRAMPAC Evaluation Software
Ci	Curie
CPR	cellulose, plastic, rubber
CSV	Comma Separated Values
DA	Data Administrator
DOE	U.S. Department of Energy
DOT	U.S. Department of Transportation
dpm/cm <sup>2</sup>	disintegrations per minute over a square centimeter
EPA	U.S. Environmental Protection Agency
FGE	fissile gram equivalent
FGGR	flammable gas generation rate
FI	flammability index
HRCQ	highway route control quantity
HTML	Hypertext Markup Language
ICV	Inner Containment Vessel
IDC	Item Description Code
kg	kilogram
LDR	Land Disposal Restriction Notification
LLD	lower limit of detection
LWA	Land Withdrawal Act
MgO	magnesium oxide
mrem/hr	milliroentgen equivalent man per hour
MTRU	mixed transuranic
MWIR	Mixed Waste Inventory Report
nCi/g	nanocuries per gram
NDE	Nondestructive Examination
NIST	National Institute of Standards and Technology
NRC	U.S. Nuclear Regulatory Commission

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OCA	Outer Containment Assembly
OJT	on-the-job-training
OPCTCD	Overpack Payload Container Transportation Certification Document
PATCD	Payload Assembly Transportation Certification Document
PCB	polychlorinated biphenyl
PCTCD	Payload Container Transportation Certification Document
PDF	Portable Document File
PE-Ci	Pu-239 equivalent Curie
ppm	parts per million
QA	Quality Assurance
RH	remote-handled
RHTES	RH-TRAMPAC Evaluation Software
RQ	reportable quantity
RSS	Root-Sum-Square or Square root of the sum of the squares
RTMA	RH-TRUCON Maintenance Application
RTR	real-time radiography
SWB	standard waste box
.txt	A file or set of files generated electronically from a Microsoft excel spreadsheet
TAA	TRU alpha activity
TAAC	TRU alpha activity concentration
TBO	to-be-overpacked
TBq	terabecquerels
TCA	Transportation Certification Assistant
TCP/IP	Transport Control Protocol/Internet Protocol (IP address)
TCO	Transportation Certification Official
TDOP	ten-drum overpack
TGRR	total gas generation release rate
TMU	total measurement uncertainty
TRAMPAC	Transuranic Waste Authorized Methods for Payload Control
TRU	transuranic
TRUCON	TRUPACT-II Content Code
TRUPACT-II	Transuranic Package Transporter Model II
TSR	Technical Safety Requirements
VE	visual examination
VOC	volatile organic compound
W	Watts
WAC	Waste Acceptance Criteria
WAP	Waste Analysis Plan
WCA	Waste Certification Assistant
WCO	Waste Certification Official

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WDS	Waste Data System
WIPP	Waste Isolation Pilot Plant
WITS	Waste Information Tracking Systems
WSPF	Waste Stream Profile Form
WWIS	WIPP Waste Information System



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<b>CHANGE HISTORY SUMMARY</b>		
<b>Revision No.</b>	<b>Date Issued</b>	<b>Description of Changes</b>
1	8/24/10	Definitions: Updated the definition of Layer of Confinement to be consistent with definition from source document. Section 3.0: Editorial revisions to clarify document scope. Section 3.1: Moved text to summarize edit/limit checks to Section 2.0, Section 4.4: Updated connectivity information and login instructions. Section 5.1: Added summary information about the automated prompt for Land Disposal Restriction notification. Section 6.5: Added new information about the Automated Testing Tool that is available using the Packaging Dashboard. Section 6.14: Added a new subsection to describe the Business Reports dashboard. Section 12.0: Added a new section to describe the Report Builder function. Sections C.34, C.35, and C.36: Added descriptions of new reports that are available from the Transportation dashboard and Business Reports Dashboard. General: Updated/renamed figures, tables, and section numbering, and references to figures in various sections of the document as needed.
2	11/18/10	General: Removed information regarding submittal of document to OSTI. Definitions: Removed definition for terminal services. Section 4.0: Editorial update to further clarify access issues and connectivity. Section 4.4: Major rewrite of section regarding connectivity. Section 5.0: Updated RH container volumes to include 15-gallon drum. Section 6.9: Removed Figure showing Data Administrator dashboard. Sections A.10, A.15 and A.17: Editorial updates to describe the various edit/limit checks that are performed for submittals of NS15 and NS30 drums and the canister. General: Minor editorial updates of reference to the Hazardous Waste Facility Permit.

## **WDS DEFINITIONS**

**Acceptable Knowledge (AK)** – (1) Any information about the process used to generate waste, material inputs to the process, and the time period during which the waste was generated, as well as the data resulting from analysis of the waste, conducted prior to or separate from the waste certification process authorized by the EPA's Certification Decision, to show compliance with Condition 3 of the certification decision; and (2) knowledge used for waste characterization, which is based on the materials and process used to generate the waste. Includes information about the physical form of the waste, the base materials composing the waste (especially hazardous and radioactive materials), and the process that generated the waste. Used to define waste streams, assign summary categories, assign EPA hazardous waste numbers, and estimate the weight fraction of cellulosic, plastic, and rubber (CPR).

**Allowable Flammable Gas Concentration** – Calculated as the difference between the Mixed Lower Explosive Limit (MLEL) and the sum of the flammable gas concentrations in the innermost confinement layer in a payload container.

**Assembly** – A group of waste containers, such as seven 55-gallon drums or pipe overpacks (seven-pack), three 100-gallon drums, one standard waste box (SWB), or one ten-drum overpack (TDOP) that are packed for placement in a transportation package.

**Base Type Code** – The TRUPACT-II Authorized Method for Payload Control (TRAMPAC) addresses a certain set of container types (55-gallon drum, 85-gallon drum, SWB, TDOP, and several pipe overpacks). The Waste Data System (WDS) has more than one container type code that meet the definition of each of these TRAMPAC container types. For example, there is a 55-gallon drum (type code 1), 55-gallon drum to be overpacked - good condition (16), 55-gallon drum to be overpacked - damaged (17), and 55-gallon drum to be overpacked - solid/vitrified – good (18), and 55-gallon drum to be overpacked - solid/vitrified - damaged (19). All five of these containers meet the TRAMPAC definition of "55-gallon drums." Therefore, the Base Type Code is used to identify the type code of the container type recognized by TRAMPAC. In this example, all five container type codes have a Base Type Code of '1' identifying them all as a "55-gallon drum" for TRAMPAC evaluation.

**Canister** – The RH-TRU waste canister, which is authorized for transport within the RH-TRU 72-B shipping package.

**Certified Waste** – Waste that has been confirmed under a formal program to comply with acceptance criteria under an approved waste certification program.

**Characterization** – Sampling, monitoring, and analysis to identify and quantify the constituents of a waste material, such as review of AK, nondestructive examination, nondestructive assay, headspace gas sampling and analysis, or chemical analysis of the volatile or semi-volatile organic compounds or metals.

**Characterization Information Summary** – Summarized characterization information accompanying the Waste Stream Profile Form (WSPF).

**Content Code** – Codes found in the TRUPACT-II Content Code (TRUCON) documents that identify the generated waste and track the process and packaging history.

**Database** – The electronic storage of data in a way that allows data manipulation and retrieval. Databases may include tables, fields, and records.

**Direct Loaded** – Direct loaded waste is untreated waste loaded directly into a waste container for disposal at the Waste Isolated Pilot Plant (WIPP). Overpacked damaged drums are treated as direct loaded waste.

**Exit Code** – Values returned by the application to assist the user in discovering the source of an evaluation failure and to inform the user more specifically of the available shipment options in case of a "conditional" evaluation status.

**Field** – A single fact or data item. A field is the smallest unit of named data that has meaning in a database. In a database table, the fields are commonly referred to as columns.

**Inter-Site Shipment** – A shipment of certified transuranic (TRU) waste containers that meets U.S. Department of Transportation (DOT) and other applicable requirements of the Certificate of Compliance for the shipping package used by the shipper. Inter-site shipments are those originate at a TRU waste generator site and are being sent to a site for formal characterization, certification, and shipment to WIPP.

**Layers of Confinement** – Any boundary that restricts, but does not prohibit, the release of hydrogen gas across the boundary. Examples of confinement layers are plastic bags (smaller inner bags or larger container bags) with the allowable closure methods described in Appendix 3.8 of the CH-TRU Payload Appendices and metal containers fitted with filter vents.

**Lower Limit of Detection** – The level of radioactivity which, if present, will yield a measured value greater than the critical limit with a 95% probability. The critical limit is defined as that value which measurements of the background will exceed with a 5% probability.

**Machine Compacted Waste** – Waste whose volume has been reduced using a mechanical process.

**Mixed Lower Explosive Limit (MLEL)** – The maximum allowable concentration of flammable gas and flammable volatile organic compounds (VOCs) in the innermost confinement layer.

**MgO Target Factor** – The targeted amount of excess magnesium oxide (MgO), over and above the CPR components of the waste, that has been emplaced in a WIPP disposal room.

**Overpack Container** – A payload container (85-gallon drum, SWB, TDOP) used to package one or more filtered waste containers, prior to placement of the configuration in a Type B shipping container. The overpacked containers must meet a subset of the

regulatory requirements outlined by the CH-TRAMPAC, Waste Analysis Criteria (WAC), and Waste Analysis Plan (WAP).

**Payload** – Two assemblies (e.g., two 55-gallon drum seven packs or two SWBs) or one TDOP placed in a TRUPACT-II for shipment.

**Package** – (1) A packaging plus its contents; (2) packaging together with its radioactive contents as presented for transport.

**Packaging** – (1) The assembly of components necessary to ensure compliance with the packaging requirements of 10 CFR Part 71. (May consist of one or more receptacles, absorbent materials, spacing structures, thermal insulation, radiation shielding, and devices for absorbing mechanical shock. The vehicle, tied-down system, and auxiliary equipment may be designated as part of the packaging.) (2) The reusable Type B shipping container used for transport of TRU waste payload containers.

**Packaging Container Group** – The WDS container type codes that can be placed together in a shipping package.

**Prediction Factor** – A variable with a unique value for each VOC and packaging configuration that, when multiplied by the measured VOC concentration in the container headspace, determines the concentration of the VOC in the innermost confinement layer. The prediction factors are applicable in cases where the headspace flammable VOC concentration exceeds 500 parts per million (ppm).

**Record** – A collection of related data that is treated as a unit. Records are collections of fields. One record contains data that pertain to a single thing (e.g., container). In a database table, the records are commonly referred to as rows.

**Remote-Handled Transuranic (RH-TRU) Waste** – Transuranic waste with an external radiation dose rate greater than or equal to 200 millirem/hr and less than or equal to 1,000 rem/hr at the waste container's surface.

**RH 72-B Canister** – Container that is transported in the RH 72-B Cask.

**RH 72-B Cask** – An NRC-certified Type B transportation packaging used for transportation of RH-TRU waste.

**Secondary Waste Container** – A container (e.g., 55-gallon drum, 30-gallon drum or 15-gallon drum) that is placed inside an RH-TRU 72-B canister.

**Shipment** – A group of up to three reusable Type B shipping containers that will be shipped on one truck.

**Shipment Confirmation** – Performance of waste confirmation on a representative subpopulation of each waste stream shipment after certification and prior to shipment as described in the Hazardous Waste Facility Permit (HWFP). The Permittees will use radiography, review of radiography audio/video recordings, and visual examination (VE), or review of VE records (e.g., VE data sheets or packaging logs) to examine at

least 7% of each waste stream in each shipment to confirm that the waste contains no ignitable, corrosive, or reactive waste, that the summary category group and waste matrix code are correct, and that all hazardous waste numbers are acceptable at WIPP. Waste confirmation will be performed by the Permittees prior to shipment of waste from the generator/storage site to WIPP.

**Shipment Summary Report** – A report that may be generated from the WDS upon demand for any shipment that has been submitted to the WIPP Waste Information System (WWIS) or the WDS. The report contains the container IDs of every container in the shipment, listed by package number and by assembly ID number. The report also provides the ship date and receipt date for each shipment, as well as a summary of radionuclides, dose rates, and weights for all the containers and each assembly and package. The report contains a summary of the WSPFs and hazardous waste numbers applicable to the containers in each package.

**Waste Container Data Report** – A report that may be generated from the WDS upon demand for any individual container that has been submitted to the WDS. These reports may also be generated on a waste stream basis or on a site basis. Each report provides a summary of the data that were supplied to the WDS and the most current container status.

**Waste Stream Profile Form (WSPF)** – Form required to be submitted to and approved by the Permittees prior to shipment and disposal of waste containers in a given waste stream or waste stream lot.

**WIPP Waste Information System (WWIS)** – A computerized data management system used by WIPP to gather, store, and process information pertaining to CH and RH TRU waste destined for, or disposed of, at WIPP. The WWIS database is a subsystem of the WDS.

## **1.0 OVERVIEW**

The Waste Data System (WDS) is a web-based software system used by the Waste Isolation Pilot Plant (WIPP) to gather, store, and process information pertaining to contact-handled (CH) and remote-handled (RH) transuranic (TRU) waste. The WDS incorporates data entry, data administration and reporting functionality for waste shipments between the U.S. Department of Energy (DOE) generator sites and DOE sites where waste processing and repackaging are performed. The WDS is used to create and store documentation about waste containers, shipments, and emplacement information at WIPP. The WDS is fully compliant with and implements the data requirements summarized in DOE/WIPP-02-3122, *Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant* (WAC), and other specified authorization basis documents. The WAC serves as the DOE's primary directive for ensuring that CH and RH-TRU waste is managed and disposed of in a manner that protects human health and safety and the environment. The WDS includes all of the elements that were implemented in the WIPP Waste Information System (WWIS) to meet regulatory requirements for the operation of WIPP. The WWIS is a subsystem of the WDS.

The WDS allows users to upload container data, plan and create payloads using uploaded containers, and plan and create shipments using approved payloads. The WDS takes advantage of previously developed applications through direct integration and interfacing.

## **2.0 SUMMARY OF APPLICABLE AUTHORIZATION BASIS REQUIREMENTS**

The WIPP WAC summarizes the requirements applicable to the transportation, storage, and disposal of CH and RH-TRU waste at WIPP. The WIPP authorization basis for the disposal of CH and RH-TRU waste includes the DOE National Security and Military Applications of Nuclear Energy Authorization Act of 1980 and the WIPP Land Withdrawal Act (LWA). The WAC summarizes the requirements and associated criteria imposed by these acts and the Resource Conservation and Recovery Act (RCRA) on the TRU waste destined for disposal at WIPP.

The DOE TRU waste sites must certify CH and RH-TRU waste payload containers to the WAC. The flow-down of applicable requirements to the WAC and integrated into the WDS are traceable to several higher-tier documents, including:

- Waste Isolation Pilot Plant Documented Safety Analysis (DSAs)
- Transuranic Package Transporter-Model II (TRUPACT-II) and HalfPACT Certificates of Compliance for the transportation of CH wastes, and CNS 10-160B and RH-TRU 72-B Certificates of Compliance for transportation of RH wastes
- WIPP LWA
- WIPP Hazardous Waste Facility Permit (HWFP)

- The EPA Compliance Recertification Decision and approval for polychlorinated biphenyls (PCBs) disposal
- The EPA letter of approval of the DOE's RH-TRU Waste Characterization Program

The WAC requires that sites transmit required characterization, certification, and shipping data to WIPP using the WWIS. The WWIS is an electronic database equipped with edit/limit checks to ensure that the data representing the waste payload containers are in compliance with the WAC. The WAC requires the sites to transmit the required waste characterization, certification, and shipping data via WWIS before shipping TRU waste payload containers from a WIPP-accepted waste stream to WIPP. The WDS implements the authorization basis requirements by edit/limit checks that are included as a software module.

## **2.1 Edit/Limit Checks**

This section describes the edit/limit checks that are incorporated into the WDS software design. Appendix A contains additional information about edit/limit checks.

### **2.1.1 WIPP HWFP – Waste Analysis Plan**

The WDS container characterization edit/limit check evaluations are retrievable as a unit from the WDS middle-tier, and include the container characterization WAP evaluation and the container characterization data integrity evaluation. Appendix D lists and describes the WAP error codes.

### **2.1.2 WIPP WAC**

The WDS container certification WAC evaluation includes the applicable WAC edit/limit checks based on the container handling code. For both CH and RH containers, the container certification WAC evaluation includes the CH container edit/limit checks and the general container edit/limit checks. Appendix D lists and describes the WAC error codes.

### **2.1.3 TRAMPAC**

The CTMA and RTMA applications are specialized reference data applications used to manage TRUCON Code and Shipping Category data. The data provide references for performing the associated TRAMPAC evaluations. Appendix D lists and describes the TRAMPAC error codes.

### **2.1.4 WIPP DSA**

The WIPP DSA provides a summary of limits to be imposed on CH and RH containers in accordance with the Nuclear Criticality Safety Evaluation. The WDS conducts edit/limit checks on CH and RH containers according to the values described in Chapter 6 of the WIPP DSA. Refer to Appendix D for a list of DSA error codes and a description of each error code.

### **3.0 SCOPE**

This user's manual assists users in performing data entry, data review, search features, producing output reports, and identification of helpful features that exist in each topic-specific dashboard.

The MgO barcode application is used to facilitate the receipt and emplacement of CH waste shipments at WIPP. The application was designed to be used by wireless barcode scanners and tied directly to shipment and container information provided by the application. Many of the original barcode reporting functions that were in the WWIS have been transferred to the WDS application. Appendix B provides a summary of the Emplacement Tracking System barcode application and the WDS Manual Emplacement Screen.

### **4.0 SECURITY, ACCESS PRIVILEGES, PASSWORDS, AND CONNECTIVITY**

This section provides information about security, system requirements, passwords, and connectivity. WDS users who are external to WIPP access the system via DOENet or the WIPPIVE server. Users who are internal to WIPP in Carlsbad and at the WIPP site access the WDS via WIPPNet. This section also provides instruction for obtaining help from the WIPP DAs.

#### **4.1 Security**

Effective security is vital for safeguarding information and business processes. The WDS takes every reasonable effort to provide safe and secure access for its users while maintaining the highest levels of data security. This section summarizes components that comprise the overall security design for the WDS.

The goal of the WDS web server deployment is to closely follow the recommendations set forth in the National Institute of Standards and Technology (NIST) Guidelines on Securing Public Web Servers. The NIST guidelines provide comprehensive standards for securing web servers and the applications they contain. The security requirements and security controls that are in place to protect the accreditation boundary and the database have been implemented as described in the Department of Energy Office of Environmental Management Program Security Plan.

#### **4.2 System Requirements**

WDS users are required to be registered. It is recommended that users have Internet Explorer 8 or Firefox software installed and operational on their desktops when accessing the WDS. The system layout is optimized for 1024 x 768 resolution.

#### **4.3 User Accounts and Passwords**

Each registered user is assigned a User ID and creates a password that is used to log in to the WDS application. The user's password must be a "complex" password having at least six alphanumeric characters, including at least one capital letter and at least one numeric character. When the user account is created, each user is assigned a primary



role based on the functions that the user will perform when using the WDS. For example, users who upload and submit container data to the WDS and users who create payloads and shipments are assigned the Shipper/Generator User Role. User roles are explained in detail in Section 6.0 of this manual.

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**NOTE**

In accordance with an approved program plan document, the DAs create, edit, and inactivate WDS user accounts, set expiration periods for user passwords, add or remove role associations to user accounts, and add or remove site/program associations with user accounts. Whenever an inactivated user account is reactivated, the password is reset.

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Whenever a password is created or an existing password is reset, the user is required to confirm the new password by entering it a second time. Detailed instructions for creating and confirming the new password are typically sent to each user via email by the DA when the user account is created. After a user account has been established, the user is permitted to update the following account record fields by clicking the user preferences link at the bottom of the page: first name, last name, phone number, fax number, company, address, city, state, zip code, password, email address, and email notification flag. The user ID cannot be edited.

The data display is restricted to the program ID(s) associated with the user account by functional area:

- Characterization container data functions are restricted by certification program ID authorization
- Certification container data functions are restricted by certification program ID authorization
- Payload and shipment functions are restricted by shipping program ID authorization

#### **4.4 Connectivity and WIPP Technical Support Contact Information**

Prospective users who require access to the WDS may contact a DA via email at [DL\\_WDS\\_DA@wipp.ws](mailto:DL_WDS_DA@wipp.ws) to request access to WDS. Alternatively, the prospective user may contact a DA by telephone to obtain a WDS Access Request Form. The prospective user will be sent a WDS Access Request Form via email. The prospective user will then complete the form, provide justification of the need for access to the application, have the form approved by a management sponsor and return it via email or fax to the DA. Upon receipt of the completed WDS Access Request Form, the DA will set up the user's account in the application and interface with the WIPP Information Resource Management Group to assist the user with any connectivity issues that may prevent the user from accessing the WDS. If necessary, completion of additional forms may be required to establish access to the WIPP Secure Access (WIPPIVE), DOENet and WIPPNet. After all required application forms have been completed and approved,

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the prospective user will receive the Uniform Resource Locator (URL) (i.e., internet address) needed to connect to the system, instructions regarding security, and maintenance of passwords when accessing the WDS via WIPPIVE, WIPPNet or DOENet via email. For a user who accesses the WDS externally, support from the user's IT support group may be required to resolve connectivity issues. For example, if the internet connection at the user's location is lost for any reason, the user must wait for the connection to be restored by the local IT support group in order to connect to WIPPIVE or the WDS. When connectivity issues cannot be resolved by WIPP personnel, external users must obtain support from and/or utilize the services provided by their local IT support group when directed to do so.

The DAs may be contacted any time WIPPIVE or other internet connectivity issues need to be resolved. The DA cell numbers for off-hour emergency connectivity issues is sent to each user via email when the user account is created. The DAs may be reached during off hours via email at [DL\\_WDS\\_DA@wipp.ws](mailto:DL_WDS_DA@wipp.ws).

**Figure 4-A. WDS Login Page**

System Use Notification

Legal Notice

\*\* For Authorized Government Use Only \*\*

WARNING: PRIVACY AND SECURITY NOTICE


This computer system application is owned by the U.S. Department of Energy (DOE), and is not for public use. This system, including all related equipment, networks and network devices (specifically including Internet access), are provided solely for authorized U.S. Government work. Users (authorized or unauthorized) have no explicit or implicit expectation of privacy.

DOE computer systems and applications may be monitored for all lawful purposes, including ensuring authorized use, providing system management, protecting against unauthorized access, and verifying security procedures, survivability, continuous operation and operational security. Any or all uses of this system and files on this system may be intercepted, monitored, recorded, copied, audited, inspected, and disclosed to other DOE offices and sites, other Government agencies, and law enforcement personnel.

Use of this DOE computer system (authorized or unauthorized) constitutes your consent to monitoring, recording and auditing of this system. Unauthorized use may subject you to criminal prosecution. Evidence of unauthorized or improper use collected during monitoring, recording, and auditing may be used for administrative, civil, criminal or other adverse action. By continuing to use this system, you confirm your awareness of, and consent to, these terms and conditions of use.

LOG OFF IMMEDIATELY if you do not agree to the conditions stated in this warning.

☐ I AGREE TO THE ABOVE TERMS OF USE.



Username

Password

DB Instance

prd01

LOGIN

---

**NOTE**

If the URL changes, users will be notified. At first login, the user may add the Internet Protocol (IP) address to Favorites as shown in Figure 4-A above.

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- When the URL is entered into the browser or selected from the user's Favorites list, the WDS login screen will appear as shown in Figure 4-A. Read the Privacy and Security Notice prior to logging in.

Use the following process to log in:

- Select the checkbox to agree to the terms of use.
- Enter a valid username in the User ID block.
- Enter a valid password in the Password block.
- Select the database that needs to be accessed from the DB instance dropdown menu.
- Press the Login button.

---

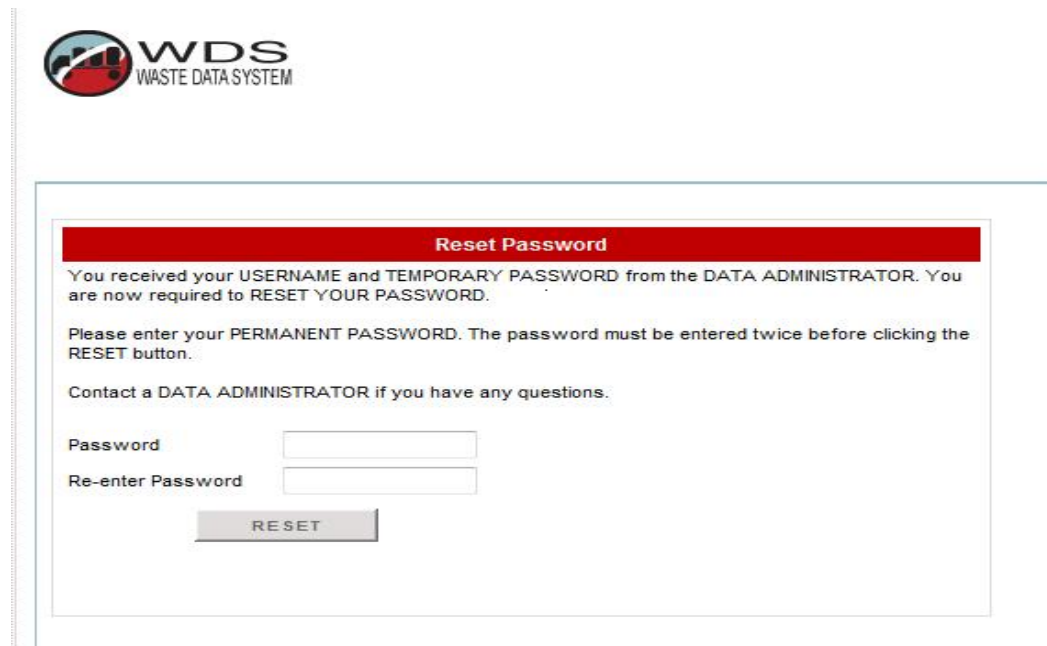
**NOTE**

If the terms of use checkbox is unchecked, the user will be reminded to check the box before proceeding.

---

At first login, after the warning message has been confirmed and the login button is pressed, the software directs the new user to reset the password as shown below. The new password must be a "complex" password having at least six alphanumeric characters, including at least one capital letter and at least one numeric character.

**Figure 4-B. WDS Reset Password Page Example**



The WDS stores the username, user IP address, and date/time of login attempt for any login attempt to the system. The WDS will close the current session after 90 minutes of inactivity. The user must then reenter identification and authentication information to access the WDS. The WDS enforces a limit of three consecutive invalid access attempts by a user during a 15-minute period, after which the WDS locks the account.

---

**NOTE**

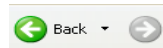
The DA may unlock user accounts frozen by invalid login attempts. When an account is unfrozen, the WDS require the DA to generate the password. After the DA has reset a user password, the user is required to create a new password upon the first login. The user is required to confirm the updated password by entering it a second time with an exact match.

---

After acceptance of the security acknowledgement, the WDS Home Screen will appear. The home screen allows users to select a dashboard or respond to items posted in the action center. Dashboards are made available for selection by using the Dashboard button or the Dashboard dropdown menu.

## **4.5 Navigation**

In the WDS, users have the option to use the Internet Explorer Forward and Back buttons to view screens previous to the screen being viewed.



## **5.0 VOLUME CONVERSION, WEIGHT CONVERSION, AND NAVIGATION**

This section provides the user with a basic summary of standard volumetric conversions used in the database and instructions for navigating the WDS.

The container volume of a CH waste container is defined in cubic meters (m<sup>3</sup>) as follows:

- 55-Gallon Drum 0.21 m<sup>3</sup>
- 85-Gallon Drum 0.32 m<sup>3</sup>
- 100-Gallon Drum 0.38 m<sup>3</sup>
- Standard Waste Box 1.88 m<sup>3</sup>
- Ten-Drum Overpack 4.5 m<sup>3</sup>
- Pipe Overpacks 0.21 m<sup>3</sup>

The waste volume of a CH or RH payload container shall be calculated in m<sup>3</sup> as the sum of the container volume of the waste container(s) comprising the payload container, excluding the volume of dunnage containers. The waste volume of each pipe overpack is equal to the volume of the respective pipe component.

The container volume of an RH waste container is defined in m<sup>3</sup> as follows:

- 15-Gallon Drum 0.057 m<sup>3</sup>
- 30-Gallon Drum 0.110 m<sup>3</sup>
- 55-Gallon Drum 0.21 m<sup>3</sup>
- 72B Canister 0.890 m<sup>3</sup>

For weight conversion, the WDS converts kilograms (kg) to pounds by multiplying by a factor of 2.205. For all weight calculations, the software performs the entire calculation in kg and applies the conversion factor for pounds to the result when applicable. The waste container net weight is the sum of all material parameter weights for those material parameters identified as waste reported for the container.

### **5.1 Packing Fractions for Compacted Waste**

The WDS determines the packing fraction based on the compaction level of a non-overpack container in grams per cubic centimeter of waste (g/cc) based on the density of the CPR (excluding cellulosic and plastic packaging materials in pipe overpacks) present in the container compared to the density of polyethylene as follows:

- CPR density (g/cc) = ((waste CPR weight (kg) + packaging CPR weight (kg)) × 1000 (g/kg)) / (container volume (m<sup>3</sup>) × 1000000 (cm<sup>3</sup>/m<sup>3</sup>))
- 20% poly density = .20 × .923 (g/cc) = .1846 (g/cc): If the container CPR density (g/cc) > .1846 (g/cc) and ≤ .6461 (g/cc), the compaction level is defined as "partially compacted."

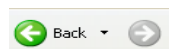
- 70% poly density =  $.70 \times .923 \text{ (g/cc)} = .6461 \text{ (g/cc)}$ : If the container CPR density (g/cc)  $>.6461 \text{ (g/cc)}$ , the compaction level is defined as "fully compacted."
- If the container CPR density (g/cc)  $\leq .1846 \text{ (g/cc)}$ , the compaction level is defined as "non-compacted."

The WDS determines the compaction level of an overpack container to be the highest level of compaction present in the individual containers in the overpack container.

Refer to the Constants Reference Data Report for a listing of minimum/maximum values and units of conversion for reported radionuclide values that are used in the WDS.

## **5.2 Land Disposal Restriction Notification**

If any waste stream profile associated with a shipment has not appeared on a previously sent shipment, or if any hazardous waste code has not appeared on a previously sent shipment in the waste stream profile associations present on a shipment, LDR paperwork is required for the shipment. As an enhancement to ensure compliance with HWFP requirements regarding LDR notification, a message will appear on the shipment screen to prompt the user to initiate an LDR Notification when needed.



---

### **NOTE**

Users should not use the Forward and Back buttons when there is an expectation that records shown in previous screens will be refreshed based on an action taken when working in the current screen, such as removal of an inner container from an overpack. It is recommended that the WDS menu be used when previously stored records need to be refreshed.

---

## **6.0 DASHBOARD SUMMARIES**

Depending upon assigned database privileges, the user will have the option to select one or more dashboards from the main menu. When the desired dashboard is selected, the user will then have the option to select Functions and Reports from the dashboard. Refer to the examples below for a summary description of each dashboard.

### **6.1 General Report Structure**

The following items are displayed on all reports:

- Title page fields: report date/time, report title, version of the report, WDS instance on which the report was executed, User ID of the current user, total number of pages in the report, select criteria (as applicable)
- Header of each page: report title, "Waste Isolation Pilot Plant," page number

Reports are available in PDF (portable document file) format unless otherwise specified. The default selection criteria are set to a wildcard (%) or null value (blank). When a wildcard or null value is used for the selection criterion, the WDS will not restrict the query by that parameter. The default date is set to 1/1/1999 for all start date criteria fields, unless otherwise specified. The default date is set to the current date for all end date and single date selection criteria, unless otherwise specified by the user at the time the report is generated. When a container number, payload ID, or shipment number is input or otherwise displayed, the user is provided direct access to the corresponding container report (e.g., container data report, overpack data report, or canister data report, payload report, or shipment summary report).

## **6.2 General User Roles**

DA, Shipper/Generator, and Packaging users are allowed to access reports for container, overpack, canister, payload, and shipment records without regard to status. Appendix C provides additional details about reports accessible to these users.

Confirmation users and Transportation users are allowed to access shipment reports for shipments without regard to status. All other report types are restricted to approved or completed records only (containers, overpacks, payloads). Appendix C provides additional details about reports accessible to Confirmation users.

All other users (Waste Handling Operations, Transportation, New Mexico Environment Department (NMED), EPA, Carlsbad Field Office (CBFO), Safety and Emergency Response, WIPP and Business Management) are restricted to reports for approved or completed records only (containers, overpacks, payload, shipments). Access to reports concerning inter-site shipments is restricted to Business Management, DA, Shipper/Generator, and Packaging users. Appendix C provides additional details about reports accessible from the various dashboards.

---

### **NOTE**

If reference data are not available for a site due to assignment of privileges, refer to the users' reference data report to review assigned privileges. Appendix C provides an example of a reference data report and a summary of report contents.

---

## **6.3 Shipper/Generator Dashboard Functions**

The functions and reports available from the Shipper/Generator dashboard are shown in Figure 6-A. Additional details about the functions performed by Shipper/Generator users are described in Appendix E. Appendix C provides additional details about reports accessible from this dashboard.

The Shipper/Generator dashboard shown in Figure E-15-A is accessible only to users with the Shipper/Generator role. The dashboard provides access to the following:

- General Query function.


- Container Characterization Data Submittal function, which allows a user to view totals for containers currently in the characterization process associated with the user's authorization. The totals are broken down by current characterization status.
- Container Certification Data Submittal function, which allows a user to view totals for containers currently in the certification process associated with the user's authorization. The totals are broken down by current certification status.
- Container Certification Approval/Rejection Report.
- Overpack planning and completion function, which allows a user to view the number of to-be-overpacked CH containers available in the different stages of the certification approval process (pre-submittal, pending, hold, and approved), divided into totals by current location, certification program ID, container type code, and certification approval status.
- Canister planning and completion function, which allows a user to view the number of to-be-overpacked RH 72-B containers available in the different stages of the certification approval process (pre-submittal, pending, and approved), divided into totals by current location, certification program ID, container type code, and certification approval status.
- Payload data entry functions, which allows a user to view the number of payload containers available for payload planning (pending and approved certification status), divided into totals by handling code, current location, shipping program ID, container type code, and certification approval status.
- Shipment data entry function, which allows a user to view the number of payloads available for shipment planning (payloads in complete status), divided into totals by handling code, current location, shipping program ID, and package type.
- Data Upload function.
- Inter-Site Shipment Receipt.



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Figure 6-A. Shipper/Generator Dashboard



7/8/2010 8:38


LOG OUT


DASHBOARDAD-HOC QUERYSCRIPT INTERFACE


DashboardSHIPPER GENERATOR DASHBOARD


ContainerSEARCH


FUNCTIONS


Container Characterization Data Submittal


Container Certification Data Submittal


Canister Planning & Completion


Overpack Planning & Completion

Payload Planning & Completion

Shipment Data Entry

Data Upload Function

Dunnage Container Data Entry

Inter-site Shipment Receipt

REPORTS

→ Container Certification Approval/Rejection Report

→ Containers with Conditional Status List

→ Containers in Certification Pre-submittal Status

→ Containers Certification Approved - Not Yet Shipped

→ Containers Certification Approved - Assigned to Shipment

→ Shipment Summary Report

→ Container and Shipment Query

→ Reference Table Reports

Characterization

Pre-submittal	66
Pending	25
Holding	0
Approved	34

Certification

Pre-submittal	1046
Pending	0
Holding	0
Approved	3075

Container Activity

Certification Program

Destination

Start Date

End Date

Container Type

Waste Stream

Split Out Quick-to-WIPP?

SEARCH

EXPORT

Overpack Candidates

Certification Program

Destination

Current Location

Waste Stream

Container Type

SEARCH

EXPORT

Canister Candidates

Certification Program

Destination

Current Location

Waste Stream

Container Type

SEARCH

EXPORT

Payload Candidates

Shipping Program

Certification Program

Destination

Current Location

Waste Stream

Container Type

SEARCH

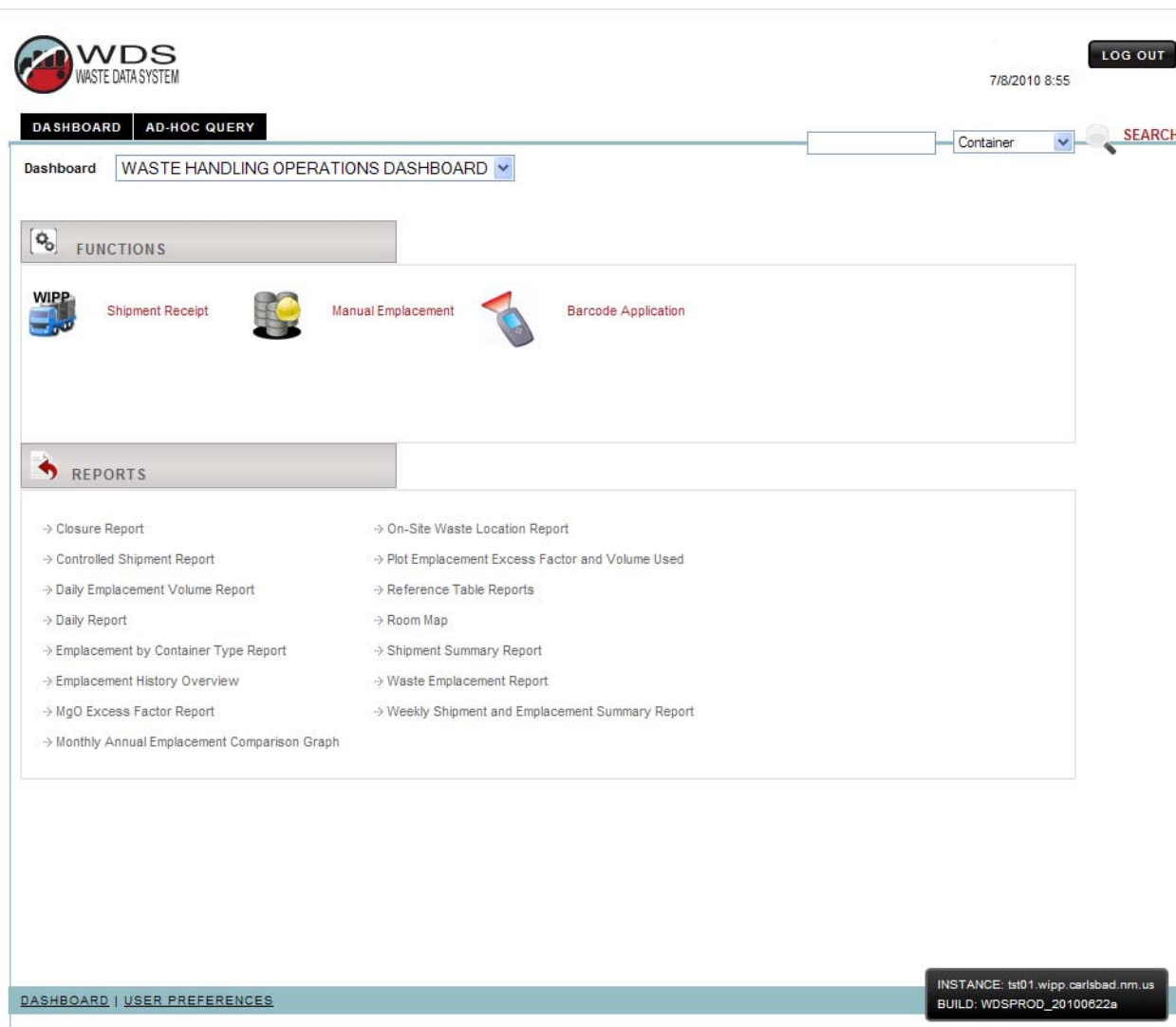
EXPORT

Shipment Candidates

## 6.4 Waste Handling Operations Dashboard

The functions and reports that are available from the WIPP Waste Handling Operations dashboard are shown in Figure 6-B. Details about the Shipment Receipt function performed by WIPP Waste Handling Operations and Transportation users are described in an approved WIPP TRU waste receipt procedure. Appendix B provides a summary of the Manual Emplacement function for RH waste containers. Details are provided in WIPP Waste Handling Operations procedures. Appendix C provides additional details about reports accessible from this dashboard.

**Figure 6-B. Waste Handling Ops Dashboard**



## 6.5 Shipment Confirmation Dashboard

The functions and reports available from the Shipment Confirmation dashboard are shown in Figure 6-C. When a user selects the Shipment Confirmation Review icon, a list of shipments with a status of In Review is presented, as shown in Figure 6-3a. When the user selects the blue toggle icon next to a shipment number from the list,

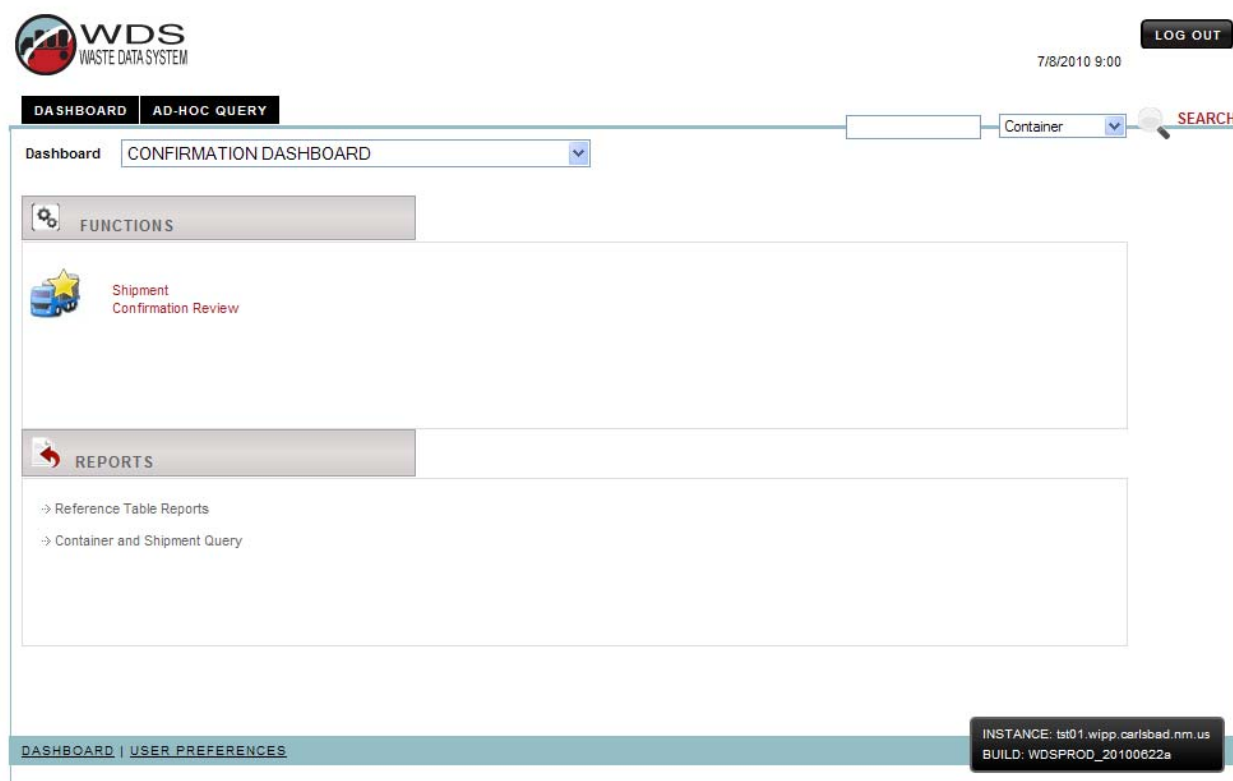
## Waste Data System User's Manual

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another list appears showing the waste stream, payload container count, Payload Number, a link to each Container Number, a link to an Excel spreadsheet and an Adobe PDF report, and the container type. The Container Confirmation Report provides summary information for all containers in the shipment. The user may also select the same report for a waste container.


When the user selects the link to the shipment number, a shipment data report will appear on the screen. Information about PCBs is shown on the report. After the confirmation process is complete, the user checks the box adjacent to the shipment number on the form and presses the confirm button located at the bottom of the form. The shipment status will then be updated to Approved. Additional details about the functions performed by WIPP Shipment Confirmation users are contained in the WIPP HWFP and approved WIPP procedures for waste stream shipment confirmation. Appendix C provides additional details about the reference table reports accessible from the Confirmation dashboard.

**Figure 6-C. Confirmation Dashboard**



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Figure 6-3a. Confirmation Dashboard



7/8/2010 9:02

LOG OUT

DASHBOARDAD-HOC QUERY


Container   SEARCH


SHIPMENT CONFIRMATION REVIEW














In Review Shipments

PendingApproved

☐ [LA100049](#)

Container Confirmation Report: 

Payload Container List: 

Waste Stream (Container Count)	Payload Num	#	Container Num	Rep	Container Type
LA-MHD01.001(3)	LA1489	1	<a href="#">LASB00838</a>		14 - SWB - OVERPACK
			<a href="#">LA00000056546</a>		16 - 55 GAL DRUM TO BE OVERPACKED - GOOD CONDITION
			<a href="#">LA00000083803</a>		16 - 55 GAL DRUM TO BE OVERPACKED - GOOD CONDITION
			<a href="#">LA00000083901</a>		16 - 55 GAL DRUM TO BE OVERPACKED - GOOD CONDITION
			<a href="#">LA00000083931</a>		16 - 55 GAL DRUM TO BE OVERPACKED - GOOD CONDITION
	LA1490	2	<a href="#">LASB00840</a>		14 - SWB - OVERPACK
			<a href="#">LA00000054782</a>		16 - 55 GAL DRUM TO BE OVERPACKED - GOOD CONDITION
			<a href="#">LA00000057111</a>		16 - 55 GAL DRUM TO BE OVERPACKED - GOOD CONDITION
			<a href="#">LA00000083891</a>		16 - 55 GAL DRUM TO BE OVERPACKED - GOOD CONDITION
	LA1491	3	<a href="#">LASB00839</a>		14 - SWB - OVERPACK
			<a href="#">LA00000056166</a>		16 - 55 GAL DRUM TO BE OVERPACKED - GOOD CONDITION
			<a href="#">LA00000083649</a>		16 - 55 GAL DRUM TO BE OVERPACKED - GOOD CONDITION
			<a href="#">LA00000083719</a>		16 - 55 GAL DRUM TO BE OVERPACKED - GOOD CONDITION

☐ [LA100050](#)

☐ [QRR10023](#)

☐ [RL100026](#)

☐ [RL100027](#)

☐ [RL100028](#)

☐ [RL100029](#)

☐ [RL100030](#)

☐ [RL100031](#)

☐ [RL100032](#)

CONFIRM

## 6.6 Packaging Dashboard

The functions and reports available from the Packaging dashboard are shown in Figure 6-D. Additional details about functions performed by WIPP Packaging Engineering users are described in approved procedures. The dashboard provides access to the

PCTCD, OPCTCD, PATCD, and PTCDD reports when viewing DA-approved containers or overpacks that are associated with completed payloads (PCTCD, OPCTCD), or when viewing completed payloads (PATCD for CH payloads, PTCDD for RH 72-B payloads). The dashboard provides access to the Reference Table Reports. Appendix C provides additional details about the reports accessible from the Packaging dashboard.

Access to container manual transportation review functions is restricted to users assigned the packaging role. When a user submits one or more containers that are assigned a TRUCON Code/Shipping category combination requiring a manual check, the list of containers is shown with a status of pending approval. The user can view the General Container or Overpack Data report for each container in the list. The WDS allows the user to initiate the container transportation status approval function. Upon successful initiation of the transportation status approval function, the user is required to enter an approval comment. The approval comment may be one word such as "ok," or the comment may be a detailed explanation. The entered transportation manual review approval comment is recorded and the container manual transportation status is updated to approved.

Conversely, the WDS initiates the container transportation status reject function. When a container is rejected, the WDS requires the user to enter a rejection comment. The entered transportation manual review comment will be recorded in the database and the container status will be updated to pre-submittal to certification. An email message is automatically sent to the user that inserted the container record that includes the rejection comment and indicates that the container record has been rejected.

The dashboard provides access to execute the designated CHTES test payloads and view the results as defined by the Automated Testing Tool system of the CHTES. The Automated Testing Tool performs a controlled system test of the CHTES evaluation using a standard suite of payloads. The report provides the overall outcome of running the test cases (pass or fail to the user who executed the test, and the date and time at which the execution of the test cases was begun. The output will result in an overall outcome as successful ('pass') if the results comparison shows no differences or as unsuccessful (fail) if the results comparison shows any differences. The only exceptions are for differences in the time stamp field or any record index. The output results will be recorded for each test case executed and the date and time at which the execution of the test cases was begun.

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Figure 6-D. Packaging Dashboard

The screenshot displays the WDS (Waste Data System) interface. At the top, the WDS logo is on the left, and the user information 'TEST, USER' with a 'LOG OUT' button and the date '7/7/2010 7:00' is on the right. Below the header, there are tabs for 'DA \$HBOARD' and 'AD-HOC QUERY'. A search bar with a 'Container' dropdown and a 'SEARCH' button is present. The main content area is titled 'Dashboard' and 'PACKAGING DASHBOARD'. It features several sections: 'Shipments Submitted for Review (38)' with a 'SHOW' button and a table of shipment details; 'Payloads Of Interest' with an 'Expand Search' link; and five specific filter sections, each with a 'SHOW' button and a table of results (all showing 0 records): 'Payloads with Inner Container CHTES Results of Interest', 'Payloads with High Payload FGE Totals', 'Payloads with Containers with High Decay Heat or Null/Zero Values', 'Payloads with Containers with Unusual #s of Filters', and 'Payloads with Containers with High Hydrogen or Zero/Null Hydrogen/Methane'. Below these is a 'Containers with Conditional Status List' section with an 'Expand Search' link and a table showing 0 containers. At the bottom, there is a 'FUNCTIONS' section with icons for 'Container Manual Transportation Review', 'Payload Manual Transportation Review', and 'Execute CHTES Test Payloads'. Finally, a 'REPORTS' section lists several report types: 'Payloads of Interest Report', 'Containers with Conditional Status', 'Emplacement by Container Type Report', and 'Reference Table Reports'.

WDS  
WASTE DATA SYSTEM

TEST, USER  
7/7/2010 7:00  
LOG OUT

DA \$HBOARD AD-HOC QUERY

Dashboard

PACKAGING DASHBOARD

Shipments Submitted for Review (38) SHOW

Shipment Number	Current Location	Destination Site ID	Shipping Program ID	DA Approved?	Confirmed?	Finalized?	Handling Code	Package Type(s)	Send Date	Controlled Shipment?	High-Wallage Shipment?	Packaging Reviewed?	Update Review Status
-----------------	------------------	---------------------	---------------------	--------------	------------	------------	---------------	-----------------	-----------	----------------------	------------------------	---------------------	----------------------

Payloads Of Interest [Expand Search](#)

Payloads with Inner Container CHTES Results of Interest: 0 Records SHOW

Payload Number	Shipping Program	Current Location	Destination Site	Payload Type	Container	Flammability Index	AFGC (mol fr)
----------------	------------------	------------------	------------------	--------------	-----------	--------------------	---------------

Payloads with High Payload FGE Totals: 0 Records SHOW

Payload Number	Shipping Program	Current Location	Destination Site	Payload Type	FGE (g)	FGE Error (g)
----------------	------------------	------------------	------------------	--------------	---------	---------------

Payloads with Containers with High Decay Heat or Null/Zero Values: 0 Records SHOW

Payload Number	Shipping Program	Current Location	Destination Site	Payload Type	Container	FGE (g)	FGE Error (g)	Decay Heat (W)	Decay Heat Error (W)
----------------	------------------	------------------	------------------	--------------	-----------	---------	---------------	----------------	----------------------

Payloads with Containers with Unusual #s of Filters: 0 Records SHOW

Payload Number	Shipping Program	Current Location	Destination Site	Payload Type	Container	TDOP with <8 Filters?	Drum with >1 Filter?
----------------	------------------	------------------	------------------	--------------	-----------	-----------------------	----------------------

Payloads with Containers with High Hydrogen or Zero/Null Hydrogen/Methane: 0 Records SHOW

Payload Number	Shipping Program	Current Location	Destination Site	Payload Type	Container	Analyte	Concentration (ppm)
----------------	------------------	------------------	------------------	--------------	-----------	---------	---------------------

Containers with Conditional Status List [Expand Search](#)

0 Containers Matched Your Query

Container Number	Certification Date	Current Location	Destination Site	Certification Program	TRUCON Code	Shipping Category	Evaluations
------------------	--------------------	------------------	------------------	-----------------------	-------------	-------------------	-------------

FUNCTIONS

Container Manual Transportation Review

Payload Manual Transportation Review

Execute CHTES Test Payloads

REPORTS

- Payloads of Interest Report
- Containers with Conditional Status
- Emplacement by Container Type Report
- Reference Table Reports

## 6.7 WIPP User Dashboard

The reports that are available to users from the WIPP user dashboard are shown in Figure 6-E. The WIPP user may view reports but does not perform any data input functions using the WDS. Appendix C contains additional details about reports accessible from the WIPP user dashboard.

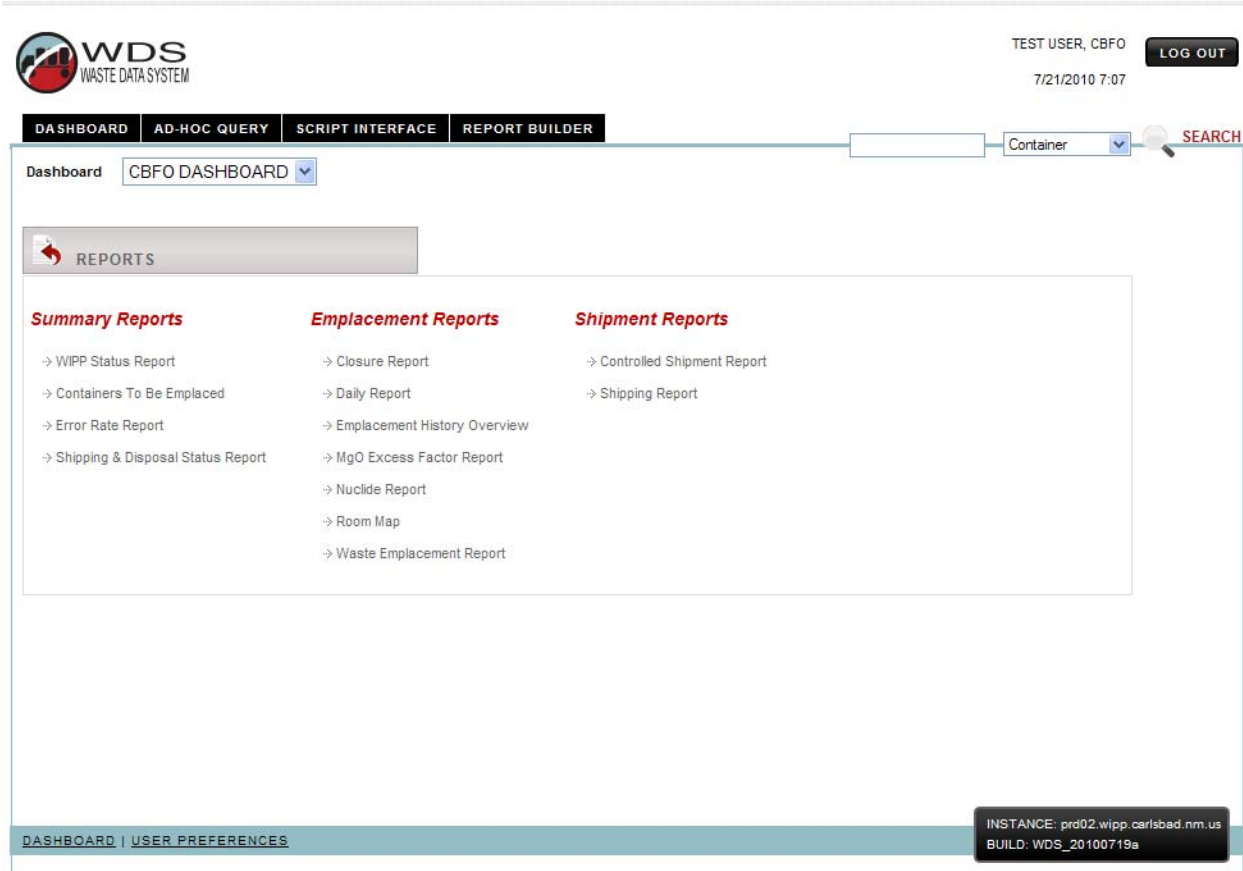
Figure 6-E. WIPP User Dashboard



## 6.8 CBFO Dashboard

The CBFO dashboard is accessible to users with the CBFO role. The CBFO dashboard provides access to the reports as shown in Figure 6-F. The CBFO user may view reports but does not perform any data input functions using the WDS. Appendix C contains additional details about reports accessible from the CBFO dashboard.

**Figure 6-F. CBFO Dashboard**



## 6.9 Data Administrator Dashboard

The functions and reports are available from the WIPP Data Administrator dashboard. Additional details about the Container/Shipment Review and Approval functions are summarized in an approved WIPP waste information tracking system (WITS) program plan. Details about the Data Administration reference table maintenance functions are described or summarized in an approved WIPP WITS program plan.

## 6.10 New Mexico Environment Department Dashboard

The reports that are available to users from the NMED dashboard are shown in Figure 6–G. The NMED users have access to reports but do not perform any data entry functions using the WDS. Refer to Appendix C for additional details about reports accessible from the NMED dashboard.



Figure 6-G. NMED Dashboard

**WWIS**  
WIPP Waste Information System

This is a development application. The associated values are used for demonstration purposes only.  
10/28/2009 15:57

USER, TEST **LOG OUT**

**DASHBOARD**

Dashboard **NMED DASHBOARD**

**REPORTS**

- Container and Shipment Query
- Shipment Summary Report
- Waste Stream Profile Container Report
- Biennial Report
- Waste Emplacement Report
- Waste Stream Characterization Container Report
- Container Waste Type Summary Report
- Waste Container Data Report (Permit Format)

**Container Status Overview**

Certification Program **All** Disposed **All** ☐ Include Overpacked Containers

Container Type **All** **SEARCH**

**DASHBOARD** | **USER PREFERENCES**

INSTANCE: tst04.wipp.carlsbad.nm.us  
BUILD: WDS\_20091026

## 6.11 Environmental Protection Agency Dashboard

The reports that are available to users from the EPA dashboard are shown in Figure 6-H. The EPA users have access to reports but do not perform any data entry functions using the WDS. Appendix C provides additional details about reports accessible from the EPA dashboard.

Figure 6-H. EPA Dashboard

**WWIS**  
WIPP Waste Information System

This is a development application. The associated values are used for demonstration purposes only.  
10/28/2009 16:05

USER, TEST **LOG OUT**

**DASHBOARD**

Dashboard **EPA DASHBOARD**

**REPORTS**

- Container Query
- Nuclide Report
- Waste Emplacement Report
- Summary of Waste Emplacement Inventory Report
- Emplacement by Container Type Report
- Emplacement History Overview

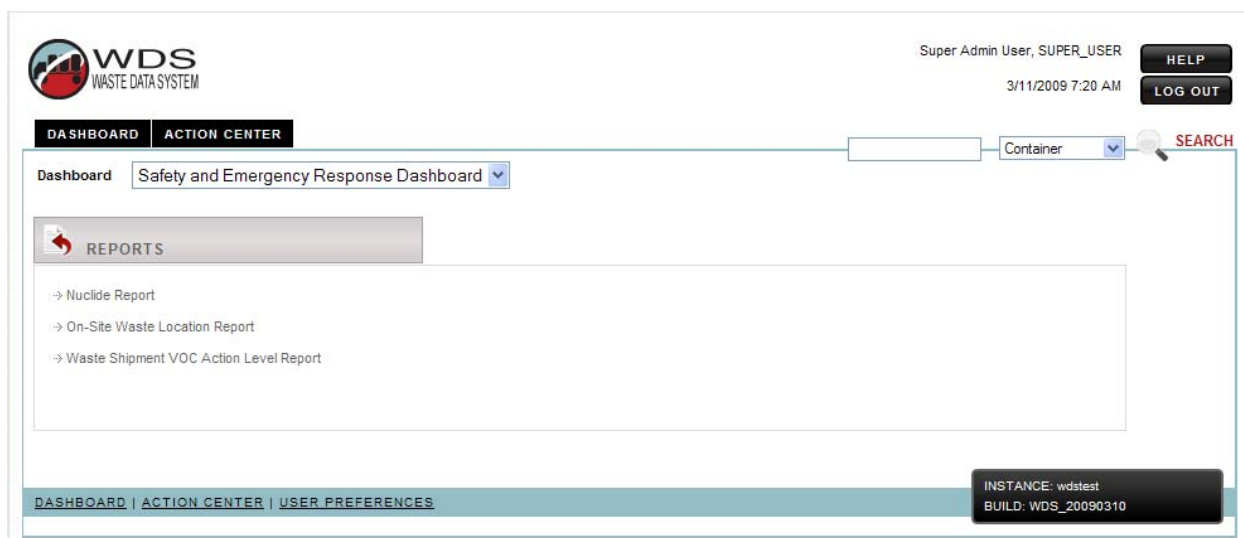
**DASHBOARD** | **USER PREFERENCES**

INSTANCE: tst04.wipp.carlsbad.nm.us  
BUILD: WDS\_20091026

## 6.12 WIPP Safety and Emergency Response Dashboard

The reports that are available to users from the Safety and Emergency Response dashboard are shown in Figure 6-I. The Safety and Emergency Response users at WIPP do not perform any data entry functions using the WDS. Appendix C provides additional details about reports accessible from this dashboard.

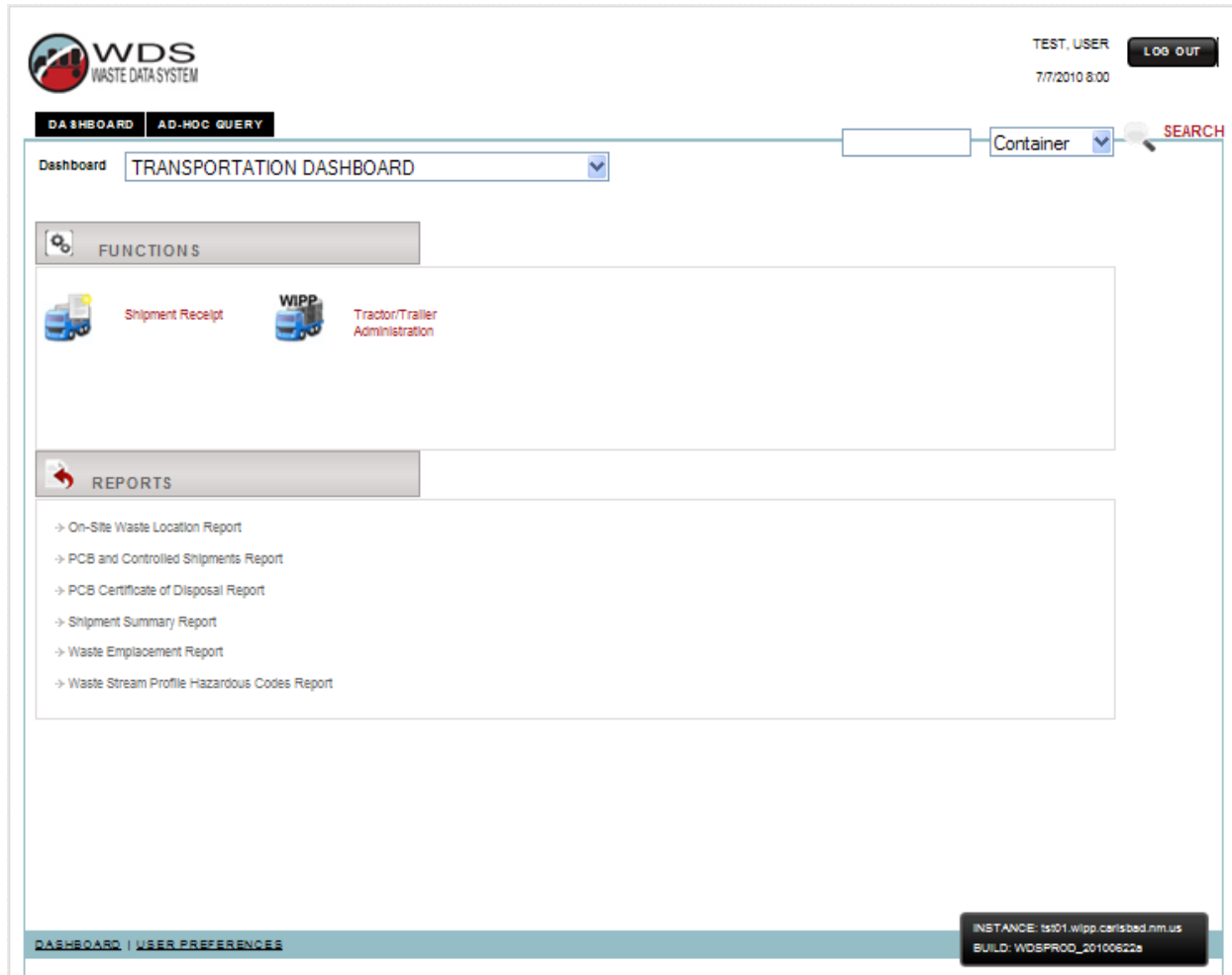
**Figure 6-I. Safety and Emergency Response Dashboard**



## 6.13 WIPP Site Transportation Dashboard

The functions and reports that are available to WIPP personnel from the Transportation dashboard are shown in Figure 6-J. Additional details about the Shipment Receipt function and the Tractor/Trailer Administration functions that are performed by Transportation users are summarized in approved WIPP procedures. Details about the shipment receipt process at WIPP is described in an approved WIPP TRU waste receipt procedure. Appendix C provides additional details about reports accessible from the Transportation dashboard.

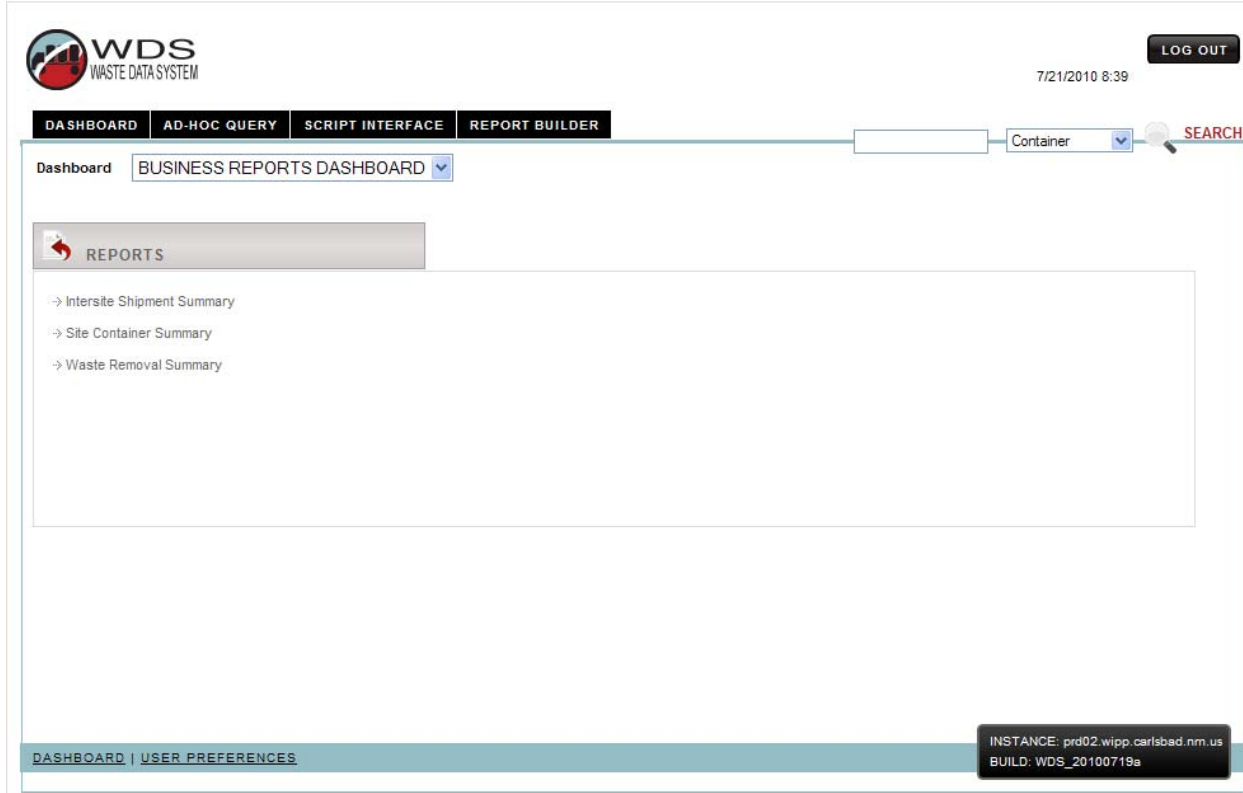
Figure 6-J. Transportation Dashboard



## 6.14 BUSINESS REPORTS DASHBOARD

The Business Reports dashboard is accessible only to users with the Business Reports role. The dashboard provides access to the Intersite Shipment Summary Report, the Site Container Summary Report, and the Waste Removal Summary Report. Users who are assigned the Business Reports role are provided with access to all of the reports that are available from this dashboard.

**Figure 6-K. Business Reports Dashboard**



## 7.0 SUMMARY OF WDS DATA STATUSES

The following statuses are applicable to WDS container, shipment and disposal data.

**Pre-Submittal to Characterization Approval (PRESUB\_CHARZ)** – Initial status for containers to be submitted for evaluation before a waste stream profile is approved. The data have been "saved" (but not yet "submitted") to the database.

When a container record is initially entered in the WDS, and if container data are never "saved," but are "submitted" instead, the pre-submittal status will never be assigned to that container. When a "submit" function is performed, a "save" function is also automatically performed.

**Pending Characterization Data Approval (PENDING\_CHARZ)** – When a user "submits" a container record to the WDS for characterization approval, and the container data pass the edit/limit checks, this status is automatically assigned to the container. The container record is now available to the DA for potential characterization data approval, and cannot be modified by the user.

**Holding for Characterization Data Approval (HOLDING\_CHARZ)** – A DA has placed the container record "on hold" while the Shipper/Generator is investigating a container data issue. The user who submitted the container record will receive a notification from the database whenever the hold status is applied. Depending on the results of the investigation, the DA will approve or reject the container data. Data for containers with

this status cannot be modified by the user. The database design incorporates functionality for the DA to describe data issues and resolutions.

**Characterization Data Approved (APPROVED\_CHARZ)** – This status is assigned by the WDS to a container record after a DA has reviewed and approved the data, and after the new waste stream profile is approved.

**Pre-Submittal to Certification Approval (PRESUB\_CERT)** – This is the initial status for waste containers that have been entered into the WDS and "saved" (but not yet "submitted") to the database. This status is applicable to waste containers that were not part of the characterization submittal and containers that were successfully submitted for certification approval and subsequently reset by a DA or the Shipper/Generator user. Resetting container records from APPROVED\_CERT to PRESUB\_CERT is done to allow for correction of data entry errors that are discovered as part of the data quality checks conducted by the sites.

When container data are initially entered in the WDS, and if container data are never "saved," but are "submitted" instead, this status will never be assigned to that container. When a "submit" function is performed, a "save" function is also automatically performed. A container that has a pending certification data approval or certification data approved status can be reset by the DA to pre-submittal to certification approval status.

**Pending Certification Data Approval (PENDING\_CERT)** – This status is assigned by the WDS to a container record when the Shipper/Generator user "submits" a complete set of container data to the database for approval. When the container record is submitted, the data are evaluated by the automated WDS edit/limit checks and the CHTES or RHTES container evaluation checks. This status is automatically assigned to the container record after the data have passed all automated edit/limit checks. The container record is now available to the DA for potential Certification Data Approval, and cannot be modified by the user.

**Holding for Certification Data Approval (HOLDING\_CERT)** – The database design allows the DAs to place containers "on hold" to allow the Shipper/Generator to investigate a container data issue identified during the data review without deleting the container record from the database. Depending on the results of the investigation, the DA will approve or reject the container data. Data for containers with this status cannot be modified by the user. The database design incorporates functionality for the DAs to describe data issues and resolutions. The user who submitted the container record will receive a notification from the database whenever the hold status is applied.

**Certification Data Approved (APPROVED\_CERT)** – The WDS automatically sends an e-mail message to the user who entered the certification data, to provide notification/confirmation that the container has been approved. Approved waste containers then become available for selection for assignment into shipment payloads.

If a certified waste container such as a damaged 55-gallon drum is designated to be overpacked into a larger payload container such as a SWB or TDOP, the

APPROVED\_CERT status will be the final status for those inner containers, and the WDS container status for the overpack will be modified further during the shipping and WIPP emplacement processes.

**New Shipment (NEW\_SHIP)** – This is the initial status for shipments that have been "saved" but not yet "submitted" in the WDS.

Data must be entered into the Shipment Number data field before a shipment may be "saved." Shipment data may be added, deleted, and modified by the user while the status of the shipment is NEW\_SHIP.

---

**NOTE**

The following data fields may be null when a shipment is submitted: Manifest Number, Shipment Send Date, Tractor ID, Trailer ID, Transporter Name, Package Numbers, OCA/OC Lid Numbers, ICV/IV Closure Dates, Dose Rates, Surface Contamination measurement results, and DOT Description. These fields must be populated by the shipper in order to finalize the shipment. By design, shipments that have not been finalized cannot be electronically received at the Destination Site.

---

**Pending Shipment Data Approval (PENDING\_SHIP)** – When a user "successfully submits" a shipment in the WDS, the shipment status becomes pending approval. The container status for each waste container assigned to that shipment is automatically set to pending shipment data approval by the database. The shipment data are now available to the DA for potential approval and an email message is automatically sent to the Confirmation Team stating that the shipment is ready to undergo waste stream shipment confirmation.

**Shipment Complete (COMPLETE\_SHIP)** – This status is automatically assigned to a shipment after all of the required shipment data fields have been entered and submitted in the WDS, and after a DA and the Confirmation Team have reviewed and approved all of the shipment data. It is imperative that each shipment be finalized prior to its actual arrival at WIPP in order to enable WIPP operations personnel to perform their functions in accordance with procedures for shipment receipt.

**Shipment En-Route (EN\_ROUTE)** – This status is assigned to a shipment after the shipment has been finalized and has departed the shipper site.

**Shipment Has Been Received (RECEIVED\_SHIP)** – When a shipment is received at the destination site, operations personnel enter the receipt date into the appropriate field on the shipment form. When the date is saved, the status for each waste container in that shipment is automatically set by the database to "Shipment Received." When waste containers are emplaced at WIPP, the disposal date and emplacement location information is record at the assembly level. A container is considered emplaced when its emplacement assembly has a non-null disposal date. An overpack payload container, the container is considered emplaced when the overpack emplacement assembly has a non-null disposal date.

## **8.0 ROLES AND SITE PRIVILEGES**

A user must obtain authorization from a sponsor and be familiar with the system before being allowed to log onto the database. Each user is assigned a role and site access privileges. Each Shipper/Generator user must be assigned both the Shipper/Generator role and access privileges for the site. Table 1 is a list of site IDs and locations. Refer also to the REF\_SITE\_PROGRAMS report for additional details regarding site IDs and locations.

<b>Table 1 – Site IDs and Locations</b>	
<b>Site ID</b>	<b>Location</b>
AE	Argonne National Laboratory – East
BC	Battelle-Columbus
BN	Advanced Mixed Waste Treatment Facility – Idaho
C1	CCP at Savannah River Site – CH Waste
C2	CCP at Argonne National Laboratory – East
C3	CCP at Nevada Test Site
C4	CCP at Los Alamos National Laboratory
C5	CCP at Lawrence Livermore National Laboratory
C6	CCP at Oak Ridge National Laboratory – CH Waste
C7	CCP at Oak Ridge National Laboratory – RH Waste
C8	CCP at Idaho National Laboratory
C9	CCP at Idaho National Laboratory – RH Waste
CA	CCP at Los Alamos National Laboratory – RH Waste
CB	CCP at Savannah River Site – RH Waste
CC	CCP at GE Vallecitos – RH Waste
CD	CCP at GE Vallecitos – CH Waste
CF	CCP at Hanford
GE	GE Vallecitos Nuclear Center
IN	Idaho National Laboratory
LA	Los Alamos National Laboratory
MD	Mound Site
NT	Nevada Test Site
OR	Oak Ridge National Laboratory
RF	Rocky Flats
RL	Hanford Site
SR	Savannah River Site
WI	Waste Isolation Pilot Plant

The following definitions have been developed for business management purposes:

**Generator Site:** Site where the waste was generated.

**Current Location Site:** Physical location of the waste.

---

**NOTE**

The physical location of the waste containers is submitted to the database with the certification data and does not automatically change as container data moves through the WDS system.

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**Certification Site:** Certified program that is certifying the waste for disposal or treatment.

**Shipment Site:** Certified program under which the waste will be shipped.

**Destination Site:** The waste's next scheduled location site.

**Assay Methods Site (Labor Code field):** Certified program that assayed the waste container.

**Characterization Methods Site (Labor Code field):** Certified program that performed VE/RTR on the waste container.

**Samples Site (Labor Code field):** Certified program that sampled the waste container.

**Sample Amounts Site (Labor Code field):** Certified program that analyzed the samples from the waste container.

Refer to the dropdown menus on the data entry forms or the REF\_SITE\_PROGRAMS reference table for a listing of valid entries. Due to the variety of valid entries for a single location, site management should provide Shipper/Generator users with guidance for correct site entries prior to submittal of container and shipment data to the WDS.

## **9.0 AD HOC QUERIES**

Special authorization is required to allow users ad hoc query privileges. Access to ad hoc query is limited to users who are authorized for ad hoc query use. The ad hoc query may be accessed by clicking the Ad Hoc Query tab on the Dashboard as shown in Figure 9-A.

**Figure 9-A. Ad Hoc Query Tab**

The screenshot displays the WDS (Waste Data System) user interface. At the top left is the WDS logo with the text 'WDS WASTE DATA SYSTEM'. To the right, it shows the user 'GLOBAL SITE ACCESS, SG\_USER' with a 'HELP' button and the date/time '2/24/2009 13:32 PM' with a 'LOG OUT' button. Below this is a navigation bar with three tabs: 'DASHBOARD', 'ACTION CENTER', and 'AD-HOC QUERY'. The 'AD-HOC QUERY' tab is currently selected. Under the 'DASHBOARD' tab, there is a dropdown menu showing 'Shipper Generator Dashboard'. To the right of the navigation bar is a search area with a text input field, a 'Container' dropdown menu, and a 'SEARCH' button.



A query may be performed for a container, payload, or shipment, based on the input of a specific container ID, payload ID, or shipment ID.

If the input value is a valid container ID and container report is selected, the WDS displays the following general report based on the container type and handling code for the container record:

- For direct-load and overpacked CH containers, direct-load RH 72B canisters, and 10-160B containers, the WDS displays the Container Data Report.
- For overpack CH containers, the WDS displays the Overpack Container Data Report.
- For overpack RH canisters, the WDS displays the Canister Data Report.

Appendix C provides examples of a Container Data Report, Overpack Container Data Report, and Canister Data Report.

If the input value is a valid payload ID and payload report is selected, and the Payload ID is not associated with a received intersite shipment, the Payload Data Report is displayed.

If the input value is a valid shipment ID and shipment report is selected, and the shipment is not a received intersite shipment, the Shipment Data Report is displayed.

The Hypertext Markup Language (HTML) display of the query result set is limited to the first 1,000 records, ordered by container, payload, or shipment number, as applicable. The size of the result set in the PDF or CSV formats is not limited.

## **9.1 Query - Container Ad Hoc Query**

The authorized user has the ability to query directly on one or more of the container-based data parameters listed in this subsection, using the form shown in Figure 9-B.

# Waste Data System User's Manual DOE/WIPP-09-3427, Rev. 2

Figure 9-B. Container Ad Hoc Query Form

WDS WASTE DATA SYSTEM

STRUM, MIKE LOG OUT

9/20/2009 8:49

DASHBOARD AD-HOC QUERY

Container SEARCH

CONTAINER A D-HOC QUERY

CLEAR ALL SEARCH

Container Number

Current Location All

Generator Site ID All

Destination Site ID All

Shipping Program ID All

Cert Program ID All

Handling Code All

Container Type All

Container Status All

Waste Stream Profile All

Waste Matrix Code All

TRUCON Code

Shipping Category

Total Dose Rate (mrem/hr)

Date Criteria

Vent Date on

Closure Date on

HGS Date on

Filter Criteria

Filter Model All

Filter Diffusivity

Filter Quantity

Total Filter Diffusivity (mol/s/mf)

Emplacement Criteria

Disposal Date on

Panel Room

Row Column

Height Borehole

Emplaced? All

FGE + 2X Err (g)

Gross Weight + Err (kg)

Decay Heat + Err (W)

Compacted? Y N O/A

PCB Waste Status? Y N O/A

BE Present? Y N O/A

Process Knowledge? Y N O/A

Headspace Gas Criteria

Headspace Hydrogen (ppm)

Methane Concentration (ppm)

Combined Hydrogen and Methane (ppm)

Total Flammable VOCs (ppm)

Aspiration Method All

CHTES Compliance Method All

Radionuclide Criteria

Total Radionuclide Activity (Ci)

Total Radionuclide Mass (g)

Isotopic data contains specified radionuclide(s)

Y N O/A

AM-241

CS-137

PII-238

PII-239

PII-240

PDF CSV GENERATE

OVERPACK A D-HOC QUERY

PAYLOAD A D-HOC QUERY

SHIPMENT A D-HOC QUERY

DASHBOARD | USER PREFERENCES

INSTANCE: ts03.wipp.ceris.bnl.gov  
BUILD: WDS\_20090918

Containers meeting the query parameters in a list are displayed and the following data points are displayed for each container record:

- Container Number
- Certification Program ID
- Current Location
- Destination Site ID

- Shipping Program ID
- Container Type
- Container Status
- TRUCON Code
- Shipping Category
- Waste Stream Profile Code
- Overpack Container Number
- Overpack Container Status

The total number of containers meeting the query parameters is displayed.

The following general data points may be queried with selections provided based on active reference table records:

- Certification Program ID
- Current Location
- Destination Site ID
- Shipping Program ID
- Generator Site ID
- Compaction Status (Y/N)
- Be Present (Y/N)
- Container Status

The container query function also allows the user to query for:

- Container number, with use of a specific container number string or a query string involving the wildcard (%)
- Container type
- Containers where FGE is less than, equal to, or greater than a user-specified value
- Containers where gross weight is less than, equal to, or greater than a user-specified value.
- The following certification data points, with selections provided based on active reference table records: Waste Stream Profile, Waste Matrix Code, and PCB Waste Status (Y/N).
- TRUCON Code and Shipping Category data points, with use of specific values or query strings involving the wildcard.
- Closure date and vent date, with use of a specific date or date range.
- Process knowledge (Y/N) and aspiration method (selections provided based on active reference table records).

- Containers where the decay heat is less than, equal to, or greater than a user-specified value.
- Headspace gas sample date (transportation samples), with use of a specific date or date range.
- Headspace hydrogen concentration and methane concentration (in ppm units) or combined hydrogen and methane concentration (in ppm units) where the concentration is less than, equal to, or greater than a user-specified value.
- Total flammable VOCs (from a container's transportation sample) where the total value is less than, equal to, or greater than a user-specified value.
- The following radionuclide fields: isotopic data contains specified radionuclide(s); radionuclide activity or mass less than, equal to, or greater than user-specified values.
- The following container filter data points: Filter Model, Diffusivity, Quantity, and total filter diffusivity.
- Handling code (CH/RH) and emplaced status (Y/N - based on disposal date recorded).
- Disposal date with use of a specific date or date range.
- A combination of location parameters: panel, room, row, column, height, borehole.
- Containers where the total dose rate is less than, equal to, or greater than a user-specified value.
- Containers where the total dose rate is within a specified range.
- CHTES compliance method (Analytical, Measurement, Testing).

The summary of query results may be exported to a PDF or CSV file.

## 9.2 Query - Overpack Ad Hoc Query

Figure 9-C. Overpack Ad Hoc Query Form

WDS WASTE DATA SYSTEM

SUPER ADMIN USER, SUPER\_USER 3/12/2009 7:35 AM

HELP LOG OUT

DASHBOARD ACTION CENTER AD-HOC QUERY

Container [ ] Container [v] SEARCH

CONTAINER AD-HOC QUERY

OVERPACK AD-HOC QUERY

CLEAR ALL SEARCH

Container Number [ ] Cert Program ID [All v] Current Location [All v]

Shipping Program ID [All v] Waste Stream Profile [All v] Container Status [All v]

Container Type [All v]

FGE (g) [ ] Gross Weight (kg) [ ] Inner Container Flam Index [ ]

Filter Criteria

Filter Model [All v]

Filter Diffusivity (mol/s/mf) [ ]

Filter Quantity [ ]

Total Filter Diffusivity (mol/s/mf) [ ]

Emplacement Criteria

Panel [ ] Room [ ]

Row [ ] Column [ ]

Height [ ] Borehole [ ]

Disposal Date [ ]

PDF CSV GENERATE

PAYLOAD AD-HOC QUERY

SHIPMENT AD-HOC QUERY

DASHBOARD | ACTION CENTER | USER PREFERENCES

INSTANCE: dev03.wipp.carlsbad.nm.us  
BUILD: WDS\_20090311a

The user may use the Ad Hoc Query form shown in Figure 9-C to perform a query directly on one or more of the overpack-based data parameters listed in this subsection.

The set of containers meeting the query parameters will be displayed in a list, where the following data points are displayed for each record:

- Container Number
- Certification Program ID
- Current Location
- Shipping Program ID
- Container Type
- Container Status
- Number of inner containers
- Number of assumed dunnage containers

The total number of overpack containers meeting the query parameters is displayed.

The overpack ad hoc query function also allows the user to query for:

- The following general data points, with selections provided based on active reference table records:
  - Certification Program ID
  - Current Location
  - Shipping Program ID
  - Container Type
  - Waste Stream Profile
  - Container Status
- Containers where FGE is less than, equal to, or greater than a user-specified value.
- Containers where gross weight is less than, equal to, or greater than a user-specified value.
- Selected container filter data points: Filter Model, Diffusivity, Quantity, and total filter diffusivity.
- Disposal date.
- A combination of location parameters: panel, room, row, column, height, borehole.
- Inner container flammability index (a CHTES overpack evaluation result) where the value is less than, equal to, or greater than a user-specified value for one or more containers associated with the overpack.
- Containers where the total dose rate is less than, equal to, or greater than a user-specified value.

The summary of query results may be exported to a PDF or CSV file.

### 9.3 Query - Payload Ad Hoc Query

Figure 9-D. Payload Ad Hoc Query Form

WDS WASTE DATA SYSTEM

SUPER ADMIN USER, SUPER\_USER 3/12/2009 7:35 AM HELP LOG OUT

DASHBOARD ACTION CENTER AD-HOC QUERY

Container SEARCH

CONTAINER AD-HOC QUERY

OVERPACK AD-HOC QUERY

PAYLOAD AD-HOC QUERY

CLEAR ALL SEARCH

Payload Number Shipping Program ID All Current Location All Destination Site ID All

Package & Payload Container Type All Complete Status All

# Dunnage Containers < > Associated Container AFGC (mol fr) < >

Total Payload FGE (g) < > Associated Container Decay Heat (w) < >

Total Payload Gross Weight (kg) < > Associated Container Flammability Index < >

PDF CSV GENERATE

SHIPMENT AD-HOC QUERY

DASHBOARD ACTION CENTER USER PREFERENCES

INSTANCE: dev03.wipp.carlsbad.nm.us  
BUILD: WDS\_20090311a

The user may use the Payload Ad Hoc Query form shown in Figure 9-D to directly query one or more of the payload-based data parameters listed in this subsection. Payloads associated with received intersite shipments are excluded from the query result set.

The payloads that meet the query parameters are displayed in a list, where the following data points are displayed for each record:

- Payload number
- Shipping Program ID
- Current Location
- Destination Site ID
- Package Type
- Associated payload container type
- Complete status
- Number of associated payload containers
- Number of dunnage containers

After the query is performed, the total number of payloads meeting the query parameters is displayed.

The payload query also allows the user to query for:

- Payload number, with use of a specific payload ID or a query string involving the wildcard (%).
- The following general data points, with selections provided based on active reference table records:
  - Shipping Program ID
  - Current Location
  - Destination Site ID
  - Package type
  - Associated payload container type
  - Complete status
- Payloads where the number of dunnage containers is less than, equal to, or greater than a user-specified value.
- Payloads where total payload FGE is less than, equal to, or greater than a user-specified value.
- Payloads where total payload gross weight is less than, equal to, or greater than a user-specified value.
- CH payloads where one or more associated containers has an AFGC less than, equal to, or greater than a user-specified value.
- Payloads where one or more associated containers has a container decay heat less than, equal to, or greater than a user-specified value.
- Associated container flammability index (a CHTES payload evaluation result) where the value is less than, equal to, or greater than a user-specified value for one or more containers associated with the payload.

The summary of query results may be exported to a PDF or CSV file.



## 9.4 Query - Shipment Ad Hoc Query

**Figure 9-E. Shipment Ad Hoc Query Form**

**WDS WASTE DATA SYSTEM**

SUPER ADMIN USER, SUPER\_USER 3/12/2009 7:35 AM **HELP** **LOG OUT**

**DASHBOARD ACTION CENTER AD-HOC QUERY**

Container **SEARCH**

**CONTAINER AD-HOC QUERY**

**OVERPACK AD-HOC QUERY**

**PAYLOAD AD-HOC QUERY**

**SHIPMENT AD-HOC QUERY**

**CLEAR ALL SEARCH**

Shipment Number Shipping Program ID All Current Location All Destination Site ID All

Handling Code All Shipment Status All Contains Payloads of Container Type All

Package Type All

Confirmed? Limit to High Wattage Shipments? N

DA Approved? Limit to Controlled Shipments? N

Shipment Finalized? Limit to HRCQ Shipments? N

Limit to PCB Waste Shipments? N

Limit to Shipments Where one or more associated payloads evaluated by Payload Manual Transportation Review? N

Payload ICV Closure Date Between and

Sent Date Between and

Received Date Between and

Assembly Processed Date Between and

Assembly Emplaced Date Between and

PDF CSV **GENERATE**

**DASHBOARD ACTION CENTER USER PREFERENCES**

INSTANCE: dev03.wipp.carlsbad.nm.us  
 BUILD: WDS\_20090311a

The user may use the Shipment Ad Hoc query form shown in Figure 9-E to directly query one or more of the shipment-based data parameters listed in this subsection. Received intersite shipments are excluded from the query result set.

The shipments that meet the query parameters are displayed in a list, where the following data points are displayed for each record:

- Shipment number
- Shipping Program ID
- Current Location
- Destination Site ID
- Shipment status
- Confirmed flag
- DA Approved flag
- Shipment finalized flag

- Send Date
- Receipt Date
- Latest Assembly Processed Date
- Latest Assembly Emplaced Date

After the query is performed, the total number of shipments meeting the query parameters is displayed.

The shipment query function also allows the user to query for:

- Shipment number, with use of a specific shipment number or a Query string involving the wildcard (%).
- The following general data points, with selections provided based on active reference table records:
  - Shipping Program ID
  - Current Location
  - Destination Site ID
  - Handling code
  - Shipment status
- Confirmed, DA Approved, and Shipment finalized status flags.
- Shipments that contain payloads of a specified payload container type, with container type selections provided based on active reference table records.
- Shipments that contain payloads assigned to a specified package type, with package type selections provided based on active reference table records.
- Shipments where the payload ICV closure date is within a specified range.
- Shipments where one or more associated payloads was evaluated by the Payload Manual Transportation Review.
- High Wattage shipments.
- Controlled shipments.
- HRCQ shipments.
- Shipments where the send date, received date, assembly processed date, and/or assembly emplaced date is within a specified date range.
- PCB waste shipments.

The summary of query results may be saved to a PDF or CSV file.

## **10.0 SHIPMENT RECEIPT AT WIPP**

The WIPP Emplacement Tracking Software tracks CH waste received and emplaced at WIPP. The WDS presents the list of shipments in En Route status with WIPP as the destination site. When a shipment arrives at WIPP, the shipment is considered received when a trained technician at WIPP enters the receipt date and time into the WDS. When each payload is unloaded, the payload is scanned or entered into the emplacement tracking software, where the status of each container is updated to the received status in the WDS. During the shipment receipt process, all container numbers are verified to ensure that the correct waste was received (correct packages on the shipment, correct assemblies in each package on the shipment, and correct containers in each assembly in the packages).

## **11.0 EMPLACEMENT OF WASTE AT WIPP**

When the waste is emplaced in the repository, the WDS updates the status of each container and assigns and stores a unique location ID for each waste container to enable full traceability of all received and emplaced waste. Details about operation of the barcode reader software and the waste emplacement process are covered in approved WIPP procedures.

## **12.0 REPORT BUILDER**

Access to the report builder functionality is limited to users who have been authorized for report builder use by management.

**Figure 12-1: Report Builder Data Selection Screen**

The screenshot displays the 'REPORT BUILDER' interface of the Waste Data System. The top navigation bar includes 'DASHBOARD', 'AD-HOC QUERY', 'SCRIPT INTERFACE', and 'REPORT BUILDER'. The 'REPORT BUILDER' section is active, showing a sidebar with categories: Result Metrics (Emplacements, Shipments Received, Shipments Sent, Volume Emplaced), Criteria (Container Type, Fiscal Year, From Date, Handling Code, Repository Panel, Repository Panel and Room, Site, Site Program, To Date, Waste Stream), Display Group (Calendar Year, Container Type, Day, Fiscal Year, Handling Code, Month, Repository Panel, Repository Panel and Room, Site, Site Program, Waste Stream, Week), and Display Format (Tabular). The main area contains a large empty box for criteria selection, with buttons for 'NEW', 'SAVE', 'SAVE AS', 'LOAD', and 'GENERATE'. A search bar is at the top right, and a footer shows 'DASHBOARD | USER PREFERENCES' and system instance/build information.

The user may select one Result Metric. The following selection choices are provided for Result Metric:

- Sent Shipments
- Received Shipments
- Emplacements
- Volume Emplaced

Sent Shipments - the number of shipments that meet the user-specified criteria with a send date within the specified date range when applicable.

Received Shipments - the number of shipments that meet the user-specified criteria with a shipment receipt date within the specified date range when applicable.

Emplacements - the number of payload containers that meet the user-specified criteria with a disposal date within the specified date range when applicable.

Volume Emplaced - volume (m<sup>3</sup>) of payload containers that meet the user-specified criteria with a disposal date within the specified date range when applicable.

The following selection choices are available for Criteria when Emplacements or Volume Emplaced is selected for the Result Metric: Site, Program, Handling Code, Waste Stream Profile, Container Type, Repository Panel, Repository Panel and Room, From Date, To Date, Fiscal Year.

The user may select one or more specific values for a selected Criteria based on active and expired reference table records for Site, Program, Waste Stream, Container Type (base type), Repository Panel, Repository Panel and Room.

The functionality will allow for either the input of From Date and/or To Date or for the input of Fiscal Year.

The functionality will allow the user to select up to two Display Group choices based on the selected Result Metric.

The following selection choices are available for Display Group when Sent Shipments or Received Shipments is selected for the Result Metric: Site, Program, Handling Code, and Date Group with Date Group choices of Calendar Year, Fiscal Year, Month, Week, Day.

The following selection choices are provided for Display Group when Emplacements or Volume Emplaced is selected for the Result Metric: Site, Program, Handling Code, Waste Stream Profile, Container Type, Repository Panel, Repository Room, and Date Group with Date Group choices of Calendar Year, Fiscal Year, Month, Week, Day.

Tabular Display Format may be selected prior to generating a report.

A text report description is displayed based on the selected report components (Result Metric, Criteria, Display Group, Display Format) and the user-specified parameter values for the selected Criteria.

The software requires the user to select from the following report components prior to generating the report: Result Metric, Display Format. The report output can be generated in HTML or CSV format.

For a report with two selected display groups, the report shall display the group with the fewest values across the page (columns) and the second group down the page (rows). The report shall display data in alphabetical and chronological (oldest to most recent) order. The software shall contain functionality to create a "printer-friendly" view of the generated report.

### **13.0 RECORDS**

The records listed below that are generated as a result of implementing this manual are considered QA records and shall be identified, classified, and maintained in accordance with WP 13-1, Washington TRU Solutions LLC Quality Assurance Program Document (QAPD), and other implementing program documents/procedures at the sites. The following documents are filed as QA Records.

- Waste Stream Profiles and/or process knowledge documentation that are approved by the destination site prior to first shipment of waste from the shipper site.

- Various reports from data management systems as required by the shippers' quality assurance program including, but not limited to, dose rate measurement reports and surface contamination records for all waste containers.
- Data Entry Spreadsheets (include formula copies of worksheets and supporting documentation of formula calculation validations, if any formulas were used in data entry).
- Container Approval/Rejection reports, copies of any e-mail correspondence, or both. Other correspondence explaining the rejection of a waste container should also be filed.

The following transportation documentation should be filed, retained, and dispositioned in accordance with established site records management program requirements and procedures.

- PCTCD/OPCTCD/PATCD
- Payload Assembly Approval/Rejection reports
- Shipment Approval/Rejection reports and results from scripts that generate data used for the purpose of documenting compliance with regulatory compliance parameters.
- Hazardous Waste Manifests or Bills of Lading

#### **14.0 ACCEPTANCE CRITERIA**

Proper completion and submittal of the records described in Section 10.0 provides evidence of satisfactory implementation of QA record requirements.

#### **15.0 TRAINING**

All WDS Shipper/Generator users shall receive on-the-job training (OJT). Other personnel who have access to the WDS will be provided training to support the work they are assigned to perform in accordance with site-specific procedures. Training on the contents of this program document is provided as a required reading OJT activity. Special training will be available on a case-by-case basis and is documented accordingly.

**APPENDIX A - EDIT/LIMIT CHECKS**  
**AND**  
**OVERPACK ROLL-UP FUNCTIONALITY**

## Appendix A - Edit/Limit Checks and Overpack Roll-Up Functionality

### **A.1 Characterization and Certification Data** **General Data Integrity Evaluation - Essential Data Elements**

The WDS automatically performs the following data integrity verifications of the essential data elements for each container submitted to characterization or certification:

- The container number is recorded for the container.
- The combination of the recorded container number and generator site ID is unique.
- The Current Location ID is recorded for the container and the recorded Current Location ID is listed in the reference tables.
- The certification program ID is recorded for the container and the recorded certification program ID is listed in the reference tables as an authorized certification program ID.
- The recorded waste stream profile is listed in the reference tables for the reported certification program ID.
- The waste handling code is recorded for the container and the recorded waste handling code is a value of "CH" or "RH."
- The container type code is recorded for the container and the recorded container type code is listed in the reference tables for the recorded waste handling code.

### **A.2 Characterization Data** **General Data Integrity Evaluation**

The WDS automatically performs the following general data integrity verifications of container characterization data in addition to the essential data elements when containers are submitted for waste stream profile review. The recorded generator site ID is listed in the reference tables as an authorized generator site.

- The recorded liner exists indicator is Y or N, and the liner hole diameter is  $\geq 7.62$  mm, or no lid is recorded if liner exists.
- The liner hole diameter is not recorded and the no lid parameter is not TRUE if the presence of a liner is not indicated.
- The recorded NDE method date is on or before the evaluation date, and after 1/1/1970.
- The sample date is on or before the evaluation date, and after 1/1/1970.



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- The Labor Code recorded for the sample is listed in the reference tables as a certified program.
- The analysis date is on or before the evaluation date, and after 1/1/1970.
- The analysis date is on or after the sample date, and after 1/1/1970.
- The recorded analyte concentration (ppm) is  $>0$  and  $\leq 1000000$ .
- No hazardous codes are recorded for the container if the recorded waste stream profile is NOT identified in the reference tables as mixed TRU (MTRU) waste.
- At least one set of NDE method data is recorded if AK Sufficiency Determination IS NOT indicated in the reference tables for the waste stream profile assigned to the container.
- Each set of NDE method data is complete with Labor Code ID, NDE method ID, and NDE method date.
- The Labor Code recorded for the NDE method is listed in the reference tables as a certified program.
- The recorded NDE method is listed in the reference tables for the recorded Labor Code.
- The recorded NDE method date falls within an approved date range for the recorded NDE method for the recorded Labor Code in the reference tables.
- The recorded CAS number is listed in the reference tables.
- The recorded analysis date falls within an approved date range in the reference tables for the recorded analysis method and Labor Code.

#### **A.3 Characterization, Certification Data and Shipment Data General Waste Analysis Plan (WAP) Evaluation**

The WDS automatically performs the following verifications for compliance with WIPP WAP requirements for container characterization data submitted for waste stream profile review and for certification data:

- The certification program ID is recorded for the container.

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**NOTE**

Certification Program ID applies at the container level. The Labor Code applies to NDE, sample, and assay data.

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- The recorded waste stream profile code is an unapproved waste stream profile for the recorded certification program ID.
- A generator site ID is recorded for the container.
- The waste matrix code is recorded for the container and the recorded waste matrix code is included in the list of waste matrix codes for the recorded waste stream profile.
- The presence of a liner is indicated for the container and the liner hole diameter or no lid is recorded if a liner is present.
- The number of layers of packaging is recorded for the container.
- At least one material parameter data record is recorded for the container and each material parameter data record is complete with material parameter and material parameter weight (kg).
- At least one hazardous code is recorded for the container if the recorded waste stream profile is identified in the reference tables as MTRU waste and each recorded hazardous code is included in the list of hazardous codes for the recorded waste stream profile.
- An NDE method (VE and/or RTR) has been performed for the container if AK Sufficiency Determination IS NOT indicated in the reference tables for the waste stream profile assigned to the container.
- At least one set of sample data is recorded for the container if samples required is indicated for the waste stream profile and each set of sample data is complete with sample ID, sample type, Labor Code, and sample date.
- The recorded sample type is listed in the reference tables identified with a permit purpose.
- At least one set of analysis data is recorded for each set of sample data for the container and each set of analysis data is complete with CAS number, analysis date, analysis method, concentration, and one or more reporting flags (N/A; B, E, J, U, and/or D).
- A set of analysis data is recorded for each analyte identified as a "target" analyte in the reference tables.

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- The item description code is recorded.
- For WAP compliance at the shipment level, the following data are recorded for each package:
  - Package Number
  - OCA Lid Number
  - ICV Closure Date
  - Dose Rates (Contact, 1 meter, and 2 meters)
  - Surface Contamination (alpha, beta/gamma)
  - DOT Description
  - RQ
  - HRCQ
  - The recorded Alpha Surface Contamination is  $\leq 20$  dpm/100 cm<sup>2</sup>
  - The recorded Beta/Gamma Surface Contamination is  $\leq 200$  dpm/100cm<sup>2</sup>

### **A.4 Container Characterization Data and Certification Data Data Integrity Evaluation - Characterization Data**

The WDS automatically performs the following data integrity verifications when container data are submitted to characterization for waste stream profile review:

- The recorded generator site ID is listed in the reference tables as an authorized generator site.
- The recorded liner exists indicator is Y or N and the liner hole diameter is  $\geq 7.62$  mm or no lid = TRUE if liner exists.
- The liner hole diameter is not recorded and no lid = FALSE if the presence of a liner is not indicated.
- For a non-overpack container, the following verifications are performed:
  - The recorded nondestructive examination method date is on or before the evaluation date, and after 1/1/1970.
  - The sample date is on or before the evaluation date, and after 1/1/1970.
  - The analysis date is on or before the evaluation date, and after 1/1/1970.
  - The analysis date is on or after the sample date, is after 1/1/1970, and each recorded analysis date falls within an approved date range in the reference tables for the recorded analysis method and Labor Code.
  - The recorded analyte concentration (ppm) is  $>0$  and  $\leq 1000000$ .

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- At least one set of NDE method data is recorded if AK Sufficiency Determination IS NOT indicated in the reference tables for the waste stream profile assigned to the container.
  - Each set of NDE method data is complete with Labor Code, NDE method ID, and NDE method date and the recorded NDE method is listed in the reference tables for the recorded Labor Code.
- Each recorded NDE method date falls within an approved date range for the recorded NDE method for the recorded Labor Code in the reference tables.
- No hazardous codes are recorded for the container if the recorded waste stream profile is NOT identified in the reference tables as MTRU waste.
- The Labor Code recorded for the NDE method is listed in the reference tables.
- The Labor Code recorded for the sample is listed in the reference tables.
- The recorded analyte is listed in the reference tables.
- Each set of material parameter data is complete with material parameter and material parameter weight (kg), the recorded material parameter is listed in the reference tables and each recorded material parameter weight (kg) is a non-negative value.

### **A.5 Container Certification Data Waste Analysis Plan (WAP) Evaluation**

The WDS performs the following verifications for compliance with WAP requirements:

- The certification program ID is recorded for the container and the recorded waste stream profile is an approved waste stream profile for the recorded certification program ID.
- The container number is recorded for the container and the container type code is recorded for the container.
- The waste handling code is recorded for the container.
- A certification date is recorded for the container.
- The closure date is recorded for the container.
- The beta/gamma dose equivalent rate and neutron dose equivalent rate have been reported for the container.

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- The gross weight (kg) and gross weight uncertainty (kg) have been recorded for the container.
- A generator site ID is recorded for the container.
- The waste matrix code is recorded for the container and the recorded waste matrix code is included in the list of waste matrix codes for the recorded waste stream profile.
- For a non-overpack container that the presence of a liner is indicated for the container and liner hole diameter or no lid is recorded if a liner is present.
- For a non-overpack container the number of layers of packaging is recorded for the container.
- At least one material parameter data record is recorded for the container and each material parameter data record is complete with material parameter and material parameter weight (kg).
- At least one hazardous code is recorded for the container if the recorded waste stream profile is identified in the reference tables as MTRU waste and each recorded hazardous code is included in the list of hazardous codes for the recorded waste stream profile.
- For a non-overpack container, an NDE method (VE and/or RTR) has been performed for the container if AK Sufficiency Determination IS NOT indicated in the reference tables for the waste stream profile assigned to the container.
- For a non-overpack container, at least one set of sample data is recorded for the container if 'samples required' is indicated for the waste stream profile.
- For a non-overpack container, each set of sample data is complete with Labor Code, sample ID, sample type, and sample date.
- For a non-overpack container, the recorded sample type is listed in the reference tables.
- For a non-overpack container, at least one set of analysis data is recorded for each set of sample data for the container.
- For a non-overpack container, each set of analysis data is complete with CAS number, analysis date, analysis method, concentration, and one or more reporting flags (N/A; B, E, J, U, and/or D).
- For a non-overpack container, a set of analysis data is recorded for each analyte identified as a "target" analyte in the reference tables.

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- At least one filter model number is recorded for the container.
- The item description code is recorded.

### **A.6 Container Certification Data Data Integrity Evaluation**

The WDS automatically performs the following data integrity verifications upon submittal of container data to Certification:

- The recorded certification date is on or before the submittal date, is after 1/1/1970, and is not before any other dates recorded for the container (closure date, vent date, PCB out of service date, waste generation date, assay method date, NDE examination date, filter install date, sample data and analysis date).
- For a damaged CH to-be-overpacked (TBO) container containing a waste form other than solidified/vitrified waste, the recorded Pu-239 equivalent curie (PE-Ci) value is  $\leq 560$  PE-Ci.
- For an RH TBO container containing a waste form other than solidified/vitrified waste, the recorded Pu-239 equivalent curie value is  $\leq 40$  PE-Ci.

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#### **NOTE**

The data integrity check for RH TBO drums is based on the limit for the overpack canister.

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- For an RH to-be-overpacked container containing solidified/vitrified waste, the recorded Pu-239 Equivalent Curie value is  $\leq 1800$  PE-Ci.
- For a non-overpack container, the fill factor is recorded for the container and the recorded fill factor is in the range 0% to 100%.
- For a non-overpack container, the TRU alpha activity (Ci) is recorded for the container.
- The recorded radionuclide is listed in the reference tables and all values for the activity (Ci), activity error (Ci), mass (g), and mass error (g) reported for a radionuclide equal zero if one or more of the values recorded for these fields are zero.
- All values for the activity (Ci), activity error (Ci), mass (g), and mass error (g) reported for a radionuclide equal -1 if one or more of the values recorded for these fields are -1.
- The assay date is on or before the evaluation date, and after January 1, 1970.

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- For a non-overpack container, at least one set of assay method data is recorded and each set of assay method data is complete with Labor Code, assay method ID, and assay method date.
- The Labor Code recorded for the assay method is listed in the reference tables as a certified program, and the recorded assay method is listed in the reference tables for the recorded Labor Code ID.
- Each recorded assay method date falls within an approved date range for the assay method for the recorded Labor Code in the reference tables.
- Each set of filter data is complete with filter model number, filter installation date, and number of filters, the recorded filter model number is listed in the reference tables, and the recorded number of filters is between 1 and 12.
- The recorded filter installation date is on or before the evaluation date, is after 1/1/1970 and the recorded filter installation date is on or after the vent date, and after 1/1/1970.
- For a non-overpack container, the recorded container number is included in the list of approved containers associated with the recorded waste stream profile if the waste stream profile requires checking containers by lot.
- For a non-overpack container, the reported TRU alpha activity for a payload container is  $\geq 0$  and the reported TRU alpha activity concentration for a payload container is  $\geq 0$ .
- For a non-overpack container, all hazardous codes listed in the waste stream profile reference table for the container's reported waste stream profile code are included in the list of hazardous codes reported for the container.
- For a non-overpack container, the Content Code is listed in the waste stream profile reference table for the container's reported waste stream profile code.

### **A.7 Container Certification Data** **Data Integrity Evaluation - Essential Data Elements**

The WDS automatically performs the following data integrity verifications when container data are submitted to certification:

- The container number is recorded for the container and the combination of the recorded container number and generator site ID is unique.
- The Current Location ID is recorded for the container and is listed in the reference tables as a valid location.

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- The Destination ID is recorded for the container and is listed in the reference tables as an authorized destination.
- The Certification Program ID is recorded for the container and is listed in the reference tables as an authorized certification program ID.
- The shipping program ID is recorded for the container and is listed in the reference tables as an authorized shipping program ID.
- The Shipping Purpose is recorded for the container and is listed in the reference tables.
- The waste handling code is recorded for the container and is a value of "CH" or "RH."
- The container type code is recorded for the container and is listed in the reference tables for the recorded waste handling code.

### **A.8 Container Certification Data Waste Acceptance Criteria (WAC) Evaluation**

#### **General Container Edit/Limit Checks**

The WDS performs the following WAC compliance verifications.

- A WAC revision number is recorded for the container and the recorded WAC revision number is listed in the reference tables.
- The recorded waste stream profile is identified in the references tables as an approved waste stream profile for the recorded certification program ID.
- A certification program ID is recorded for the container.
- A certification date is recorded for the container.
- The removable alpha surface contamination (dpm/100 cm<sup>2</sup>) is recorded for the container and the recorded removable alpha surface contamination is  $\leq 20$  dpm/100 cm<sup>2</sup>.
- The removable beta/gamma surface contamination (dpm/100 cm<sup>2</sup>) is recorded for the container and the recorded removable beta/gamma surface contamination is  $\leq 200$  dpm/100 cm<sup>2</sup>.
- The recorded container number is unique for the recorded generating site ID.



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- For a payload container, the container prefix (leading characters of the container number) is listed in the reference tables as an allowed container prefix for the recorded certification program ID.
- At least one set of filter data is recorded for the container and the recorded filter model number is listed in the reference tables.
- A set of radionuclide data is recorded for each radionuclide identified as a "EPA-tracked" radionuclide in the reference tables and each set of radionuclide data includes radionuclide, activity (Ci), activity uncertainty (Ci), mass (g) and mass uncertainty (g).
- The recorded activity (Ci), activity uncertainty (Ci), mass (g) and mass uncertainty (g) are numerical values greater than or equal to zero or the integer - 1.
- The Pu-239 FGE (g) and the Pu-239 FGE uncertainty (g) are recorded for the container.
- The recorded TRU alpha activity concentration (Ci/g) for a payload container is >100 nCi/g.
- The Pu-239 equivalent activity value (PE-Ci) has been recorded for the container.
- The beta/gamma dose equivalent rate and neutron dose equivalent rate have been recorded for the container.
- At least one hazardous code is recorded for the container if the recorded waste stream profile is identified in the reference tables as MTRU waste.
- The PCB removal from service date is recorded for a container containing PCBs and the estimated mass (kg) of PCBs is recorded for a container containing PCBs.
- A container with reported PCB content has a certification program ID that is listed in the reference tables as authorized to ship PCB waste.

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### **A.9 Container Certification Data** **Waste Acceptance Criteria (WAC) Evaluation** **CH Container Edit/Limit Checks**

The WDS performs the following verifications for each CH waste container submitted to certification:

- For a CH non-overpack payload container, the recorded container type is a drum (55-gallon, 85-gallon, 100-gallon), SWB, TDOP or 55-gallon pipe-overpack (standard 6-in. or 12-in., S100, S200, or S300).
- For a CH overpack payload container, that the recorded container type is for an overpack 85-gallon drum containing a 55-gallon drum, an overpack SWB containing up to four 55-gallon drums, or an overpack TDOP containing up to ten 55-gallon drums, up to six 85-gallon drums, or one SWB.
- For a non-overpack CH payload container, the shipping category is recorded for the container.
- A CH payload drum (55-gallon, 85-gallon, 100 gallon) containing compacted waste with Be present, the Be mass is  $\leq 1\%$  by weight.
- For a payload SWB containing machine-compacted waste with Be present, the Be mass is  $\leq 1\%$  by weight.
- For payload TDOP containing machine-compacted waste with Be present, the Be mass is  $\leq 1\%$  by weight.
- For a CH container, the Pu-239 FGE + (2 x Pu-239 FGE error) is  $\leq$  the WAC limit, depending on container type, Be content, and nature of the waste (compacted versus non-compacted).
- For a pipe overpack (standard 6-inch, standard 12-inch, S100, S200A/B, S300) containing Be, the Be mass (kg) is  $\leq 5$  kg.
- The container does not contain machine compacted waste for all pipe overpack types (standard, S100, S200, and S300).
- For a CH container containing solidified/vitrified waste, the recorded Pu-239 equivalent curie (PE-Ci) value is  $\leq 1800$  PE-Ci.
- For an undamaged CH to-be-overpacked container containing a waste form other than solidified/vitrified waste, the recorded Pu-239 equivalent curie (PE-Ci) value is  $\leq 1100$  PE-Ci.

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- For a CH payload container containing a waste form other than solidified/vitrified waste, the recorded Pu-239 equivalent curie (PE-Ci) is  $\leq$  the applicable limit from the WAC, depending on container type, configuration (direct load versus overpacked), and container integrity.
- For a CH payload container where the recorded total dose equivalent rate is  $\leq 200$  mrem/h for the container, with the exception of the S100 and S300 pipe overpacks.
- For a CH S100 pipe overpack, the total dose equivalent rate is  $\leq 179$  mrem/h for the container.
- For a CH S300 pipe overpack, the total dose equivalent rate is  $\leq 155$  mrem/h for the container.
- For a CH payload drum (55-gallon, 85-gallon, 100 gallon) containing Be and non-compacted waste, the Be mass (kg) is  $\leq 100$  kg.

### **A.10 Container Certification Data** **Waste Acceptance Criteria (WAC) Evaluation** **RH Container Edit/Limit Checks**

The WDS performs the following verifications for compliance with WAC RH requirements:

- For an RH payload container, the recorded container type is a 55-gallon or 30-gallon drum, or an RH canister.
- For an RH 72-B canister, the recorded gross weight plus gross weight uncertainty for the container is  $\leq$  the WAC limits, depending on container type.
- For an RH 55-gallon or 30-gallon payload drum, the recorded gross weight is  $\leq 1,000$  lb.
- For an RH payload container, the total activity is  $\leq 23$  (Ci/l) averaged over the volume of the container.
- For an RH canister, the recorded surface dose rate is  $\leq 1,000$  rem/hr.
- For an RH canister containing non-compacted waste, the U-235 FEM and U-235 FEM plus two times the U-235 FEM uncertainty is  $\leq 0.96$  weight % if U-235 FEM values are reported.
- For an RH-72B NS15 or NS30 canister, values are not entered for U-235 FEM or U-235 FEM uncertainty.

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- For an RH 72-B NS15 or NS30 canister containing graphite, the graphite content is  $\leq 1\%$  by weight.
- For an RH canister containing Be and non-machine compacted waste, the Be mass is  $\leq 25$  kg Be and/or BeO.
- For an RH canister containing Be and machine compacted waste, the Be content is  $\leq 1\%$  by weight of Be and/or BeO.
- For an RH canister, the recorded Pu-239 FGE + (2 x Pu-239 FGE error) is  $\leq$  the WAC limits, depending on Be content, and nature of the waste (compacted versus non-compacted)
- For an RH payload drum containing Be and machine compacted waste, the Be mass (kg) is  $\leq 1\%$  by weight Be and/or BeO.
- For an RH payload drum containing Be and non-machine compacted waste, the Be mass (kg) is  $\leq 100$  kg Be and/or BeO.
- For an RH payload drum that the recorded Pu-239 FGE + (2 x Pu-239 FGE error) is  $\leq$  the WAC limits, depending on Be content, and nature of the waste (compacted versus non-compacted).
- For an RH canister containing a waste form other than solidified/vitrified waste, the recorded Pu-239 Equivalent Curie value is  $< 240$  PE-Ci.
- For an RH payload drum containing a waste form other than solidified/vitrified waste, the recorded Pu-239 Equivalent Curie value is  $\leq 80$  PE-Ci.
- For an RH payload container containing solidified/vitrified waste, the recorded Pu-239 Equivalent Curie value is  $\leq 1,800$  PE-Ci.
- For an RH container, the total dose equivalent rate is  $\geq 200$  mrem/h and  $\leq 1000$  Rem/hr.
- For an RH container, the Content Code is reported for the container.

### **A.11 Container Certification Data** **Data Integrity Evaluation - Percent Difference**

The WDS automatically performs the following data integrity verifications for percent difference and automated calculations for a non-overpack container:

- The total material parameter weight (kg) is equal to (within a percent range identified in the reference tables) the recorded gross weight (kg) for the container.

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- The recorded material parameter weight (kg) for the steel packaging material parameter is equal to (within a percent range identified in the reference tables) the tare weight recorded in the reference tables for the recorded container type.
- The recorded Pu-239 FGE is equal to (within a percent range identified in the reference tables) the calculated FGE.
- The total material parameter weight (kg) for a container is calculated by summing the material parameter weight (kg) recorded for the container.
- The FGE for a non-overpack container is calculated by summing the product ( $m \times \text{Pu-239 FGE}$ ) for each reported radionuclide, where  $m$  = the reported mass of the radionuclide (g) and Pu-239 FGE = radionuclide-specific Pu-239 FGE conversion factor detailed in Table 3.1-2 of the CH-TRAMPAC.

### **A.12 Container Certification Data Data Integrity Evaluation - EPA Requirements**

The WDS automatically performs the following data integrity verifications for compliance with EPA requirements when container data are submitted to certification:

- For a non-overpack container, the recorded radionuclide mass (g) for each radionuclide recorded for a container is equal to (within a 5% range) the calculated radionuclide mass (g).
- The WDS automatically calculates the mass (g) for a radionuclide of a non-overpack container as follows: the recorded activity (Ci) for the radionuclide divided by the specific activity recorded in the reference tables for the radionuclide.
- For a non-overpack container, the recorded TRU alpha activity (Ci) is equal to (within a 5% nominal range) the calculated TRU alpha activity.
- The WDS automatically calculates the TRU alpha activity (Ci) for a non-overpack container as follows: the sum of the recorded activities of the radionuclides identified in the reference table as alpha-emitting TRU isotopes with half-lives greater than 20 years.
- For a non-overpack container, the recorded TRU alpha activity concentration (Ci/g) is equal to (within a 5% nominal range) the calculated TRU alpha activity concentration.
- Calculate the TRU alpha activity concentration (Ci/g) for a non-overpack container as follows: the calculated TRU alpha activity (Ci) divided by the calculated net weight (kg) times 1000 (g/kg).

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### **A.13 Container Certification Data Data Integrity Evaluation - PCBs**

The WDS performs the following data integrity verifications for a non-overpack container containing PCBs:

- The presence of PCBs is indicated for the container and the recorded PCB presence indicator is Y or N.
- The recorded PCB removal from service date is on or before the evaluation date, and after 1/1/1970.
- The recorded PCB mass (kg) is a non-negative value.
- The recorded or rolled-up PCB mass (kg) is  $\leq$  the weight of the waste in the container and the PCB mass (kg) is not recorded if the presence of PCBs is not indicated.
- The recorded PCB concentration (ppm) is a non-negative value and the recorded or rolled-up PCB concentration (ppm) is  $< 50$  ppm if the presence of PCBs is not indicated.
- The recorded or rolled-up PCB concentration (ppm) is  $\geq 50$  ppm if the presence of PCBs is indicated.

### **A.14 Container Certification Edit/Limit Check Evaluations - Data Integrity Evaluation - TRAMPAC**

The WDS performs the following data integrity TRAMPAC verifications for a CH non-overpack container:

- The WDS verifies that a closure date is recorded for the container and the recorded closure date is on or before the evaluation date, and is after 1/1/1970.
- Gross weight (kg) and gross weight uncertainty (kg) have been recorded for the container.
- The recorded Shipping Category is listed in the reference tables.
- The TRUCON Code is recorded for the container and the TRUCON/Content Code reported is listed in the reference tables.
- The combination of the recorded TRUCON Code and recorded Shipping Category is listed in the reference tables.
- The recorded number of filters is  $>0$ .

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- The process knowledge indication is recorded for the container and the recorded process knowledge indicator is Y or N.
- The recorded aqueous material indicator is Y or N or NULL.
- The recorded vent date is on or before the submittal date, and after 1/1/1970.
- The decay heat and decay heat error have been reported for the container and the recorded decay heat (W) is equal to (within a % range identified in the reference tables) the calculated decay heat.
- The WDS calculates the decay heat for a non-overpack container as follows: the sum of the product ( $m \times \text{Decay Heat}$ ) for each reported radionuclide, where  $m$  = the reported mass of the radionuclide (g) and Decay Heat = radionuclide-specific Decay heat conversion factor (W/g), detailed in Table 3.1-2 of the CH-TRAMPAC.
- The recorded truncated FGGR test indicator is Y or N or NULL and the truncated FGGR test period is recorded for a container that indicated a truncated FGGR test, or the truncated FGGR test period is not recorded for a CH non-overpack container that did not indicate a truncated FGGR test.
- The Measured FGGR is recorded for a container for which the Measured TGRR is recorded, and the Measured TGRR is recorded for a container for which the Measured FGGR is recorded.
- The Shipping Category is recorded for the container.
- For an RH container, the Content Code is recorded for the container.
- For an RH container, the recorded can number ID is unique with regards to can numbers and container numbers for the recorded certification program ID.
- For an RH container, the hydrogen concentration recorded for an inner can is  $>0$  and  $\leq 1000000$ .
- For each analyte in a transportation sample associated with a non-overpack container, the recorded analyte concentration is  $>0$  and  $\leq 1000000$ .
- The Sample Date for a transportation sample type is not null.

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### **A.15 Container Certification Data** **Data Integrity Evaluation – Beryllium**

The WDS performs the following data integrity verifications when the presence of Be is reported for a waste container.

- The recorded Be presence indicator is Y or N and the Be  $\leq 1\%$  by weight indicator is Y or N if the presence of Be is indicated for the container
- For a CH TBO container, the Pu-239 FGE + (2 x Pu-239 FGE error) is  $\leq$  the limits described in the WIPP DSA, Chapter 6, depending on container type, Be content, and compaction level of the container.
- For an RH TBO drum containing non-machine compacted waste, the Pu-239 FGE + (2 x Pu-239 FGE error) is  $\leq$  the limits described in the WIPP DSA, Chapter 6, depending on Be and graphite content, compaction of waste, and Pu-240 poisoning.
- For a damaged CH to-be-overpacked container containing a waste form other than solidified/vitrified waste, the recorded Pu-239 equivalent curie (PE-Ci) value is  $\leq 800$  PE-Ci.
- For a non-overpack container, machine compaction is indicated for the container and that the recorded machine compaction indicator is Y or N.
- For a CH payload container, an indication is recorded as to whether the dimensions of the payload container ensure a minimum 1/2-inch separation between compacted waste contents and other axially adjacent payload containers if machine compaction is indicated for the container, and the recorded minimum 1/2-inch separation indicator is Y or N.
- For an overpack container with only one inner container, the Be presence, % Be content by weight, and Be content by weight recorded for the overpack match the inner container values exactly.
- For an overpack container, machine compaction is indicated for the overpack if machine compaction waste is indicated for any of the inner containers.
- For a direct load RH canister, an indication is recorded as to whether the Be in the waste is chemically or mechanically bound if Be presence is indicated for the canister, and the recorded Be chemically/mechanically bound indicator is Y or N.



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- For a CH TBO SWB, the Pu-239 FGE + (2 x Pu-239 FGE error) is  $\leq$  the WAC limit, depending on container type, Be content, and nature of the waste (compacted versus non-compacted)
- For an RH TBO drum containing non-machine compacted waste, the Pu-239 FGE + (2 x Pu-239 FGE error) is the WAC limit, depending on Be and graphite content, compaction of waste, and Pu-240 poisoning.
- For an RH TBO drum containing machine compacted waste, the Pu-239 FGE + (2 x Pu-239 FGE error) is  $\leq 245$  g.
- For an RH TBO drum, an indication is recorded as to whether the Be in the waste is chemically or mechanically bound if Be presence is indicated for the drum.
- For an RH TBO drum containing beryllium with a NS15 or NS30 canister content code, the beryllium content is  $\leq 1\%$  by weight of Be and/or BeO.

### **A.16 Container Certification Data** **Technical Safety Requirements (DSA) Evaluation** **CH Container Edit/Limit Checks**

The WDS automatically performs the following WIPP Documented Safety Analysis compliance verifications:

- For a CH payload drum with compacted waste, the Be mass (kg) is  $\leq 1\%$  by weight.
- For a SWB, the Be mass (kg) is  $\leq 1\%$  by weight.
- For a TDOP, the Be mass (kg) is  $\leq 1\%$  by weight
- For a CH payload container, the Pu-239 FGE + (2 x Pu-239 FGE error) is  $\leq$  the limits described in the WIPP DSA, Chapter 6, depending on container type, Be content, and compaction level of the waste.
- For a CH payload drum containing Be and non-machine compacted waste, the Be mass (kg) is  $< 100$  kg.
- For a CH non-overpack payload container, the recorded container type is for a drum (55-gallon, 85-gallon, 100-gallon), SWB, TDOP or 55-gallon pipe-overpack (standard 6-in or 12-in, S100, S200, or S300).
- For a CH payload drum containing Be and non-machine compacted waste, the Be mass (kg) is  $\leq 100$  kg.

## Appendix A - Edit/Limit Checks and Overpack Roll-Up Functionality

- For a CH drum (55-gallon, 85-gallon, 100-gallon) containing Be with a Be mass (kg)  $>5$  kg and  $\leq 100$  kg, the density of the polyethylene shall not exceed 20% ( $0.184\text{g/cm}^3$ ) of its theoretical full density.
- For a direct loaded SWB, the density of polyethylene distributed in the container does not exceed 20% ( $0.184\text{g/cm}^3$ ) of its theoretical full density.
- For a direct loaded TDOP, the density of polyethylene distributed in the container does not exceed 20% ( $0.184\text{g/cm}^3$ ) of its theoretical full density.
- For a pipe overpack, the Be mass (kg) is  $\leq 5$  kg.
- For a CH payload container, the Pu-239 FGE + (2 x Pu-239 FGE error) is  $\leq$  the limits shown in the WIPP DSA Chapter 6, depending on container type, Be content, and compaction level of the waste.
- The surface dose rate does not exceed  $\leq 200$  mrem/hr.
- The vent date is recorded.
- For a CH container containing solidified/vitrified waste, the recorded Pu-239 equivalent curie (PE-Ci) value is  $\leq 1800$  PE-Ci.
- For an undamaged CH to-be-overpacked container, the recorded Pu-239 equivalent curie (PE-Ci) value is  $\leq 1100$  PE-Ci.
- For a CH payload container containing waste forms other than solidified/vitrified waste, the recorded Pu-239 equivalent curie (PE-Ci) is  $\leq$  the applicable limit shown in the WIPP DSA Chapter 6, depending on container type, configuration (direct load versus overpacked), and container integrity.
- For a CH non-overpack container, the recorded container type is for drum (55-gallon, 85-gallon, 100-gallon), SWB, TDOP, or 55-gallon pipe-overpack (standard 6-in. or 12-in., S100, S200, or S300).

### **A.17 Container Certification Data** **Technical Safety Requirements (TSR) Evaluation** **RH Container Edit/Limit Checks**

The WDS performs the following verifications:

- For an RH payload container, the recorded container type is an RH non-shielded canister either direct loaded or containing up to three 30- or 55-gallon drums, a NS15 canister containing up to three 15-gallon drums or a NS30 canister containing up to three 30-gallon drums.

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- For an RH canister containing a waste form other than solidified/vitrified waste, the recorded Pu-239 Equivalent Curie value is  $\leq 240$  PE-Ci.
- For an RH payload container containing solidified/vitrified waste, the recorded Pu-239 Equivalent Curie value is  $\leq 1800$  PE-Ci.
- For an 72-B RH waste canister, the recorded Pu-239 FGE + the recorded Pu-39 FGE uncertainty does not exceed 325 FGE.
- For an direct loaded 72-B canister, the Be mass (kg) does not exceed 25 kg.
- For an RH payload 55-gallon drum with no Be present, recorded Pu-239 FGE + the recorded Pu-239 FGE uncertainty does not exceed 200 FGE.
- For an RH payload 55-gallon drum containing Be with a recorded Be mass of  $\leq 5$  kg, the recorded Pu-239 FGE + the recorded Pu-239 FGE uncertainty does not exceed 200 FGE.
- For an RH payload 55-gallon drum with a recorded Be mass of  $>5$  kg and  $\leq 100$  k, the recorded Pu-239 FGE + the recorded Pu-239 FGE uncertainty does not exceed 100 FGE.
- A 30-gallon RH payload container contains no Be.
- For an RH payload 30-gallon drum, the recorded Pu-239 FGE + the recorded Pu-239 FGE uncertainty does not exceed 200 FGE.
- The surface dose rate for an RH container is  $\leq 1,000$  rem/hr.
- For an RH canister, the recorded gross weight (kg) is  $\leq 5,980$  lb.
- For an RH canister, the vent date is recorded for the container.
- For an RH canister containing a waste form other than solidified/vitrified waste, the recorded Pu-239 Equivalent Curie value is  $\leq 240$  PE-Ci.
- For an RH 30-gallon payload drum containing a waste form other than solidified/vitrified waste, the recorded Pu-239 Equivalent Curie value is  $\leq 80$  PE-Ci.
- For an RH 55-gallon payload drum containing a waste form other than solidified/vitrified waste, the recorded Pu-239 Equivalent Curie value is  $\leq 80$  PE-Ci.
- For an RH payload container containing solidified/vitrified waste, the recorded Pu-239 Equivalent Curie value is  $\leq 1,800$  PE-Ci.

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### **A.18 Shipments** **Preliminary Shipment Edit/Limit Checks**

The WDS performs the following verifications for each shipment.

- The Shipment Number is recorded.
- One or more payloads have been assigned to the shipment.
- The number of payloads assigned to the shipment is  $\leq$  the maximum number of payloads allowed for the packaging type in the reference tables.
- One of the "Shipment Limited Due To" choices is selected if the number of payloads assigned to the shipment is less than the maximum number listed in the reference tables.
- One of the Shipment Limited Due To choices is selected if dunnage is present in any payload assigned to the shipment.
- A Comment is recorded if "Other" is selected from the Shipment Limited Due To choice list.
- A Comment is recorded if more than choice is selected from the Shipment Limited Due To choice list.

### **A.19 Shipments** **Shipment Data Integrity Edit/Limit Checks**

The WDS performs the following verifications for each shipment:

- The recorded Shipment Number is unique value for the specified shipping program ID.
- The recorded Send Date is within five days of the evaluation date.
- The recorded Transporter is listed in the reference tables.
- The recorded Tractor ID is listed in the reference tables.
- The recorded Trailer ID is listed in the reference tables.
- The recorded Package Number is listed in the reference tables.
- The recorded Package Number is not duplicated within the shipment.
- The recorded Contact Dose Rate is non-negative.

## Appendix A - Edit/Limit Checks and Overpack Roll-Up Functionality

- The recorded 1 meter Dose Rate is non-negative.
- The recorded 2 meter Dose Rate is non-negative.
- The recorded ICV Closure Date is on or before the current system date, and after 1/1/1970.
- The recorded Alpha Surface Contamination values are non-negative.
- The recorded Beta/Gamma Surface Contamination values are non-negative.
- The Manifest is recorded if the active shipment includes one or more MTRU containers (WIPP destination site) or includes one or more containers with recorded hazardous codes (non-WIPP destination site).

### **A.20 Shipments** **Shipment TRAMPAC Evaluation**

The WDS executes the applicable TRAMPAC shipment evaluation based on the Packaging Type of the active payload as follows:

- TRUPACT - CHTES Shipment Evaluation
- HalfPACT - CHTES Shipment Evaluation
- 10-160B - 10-160B Cask Evaluation
- 72-B Cask - 72-B Cask Evaluation

### **A.21 Overpack Data Roll-up - General Data**

When the user submits the overpack, the following data roll-ups are performed by the database:

- The Waste Stream Profile Number shared by the inner containers is assigned to the overpack.
- The Waste Handling Code shared by the inner containers is assigned to the overpack.
- The Generator Site ID, Certification Program ID, Destination Site ID, Shipping Program ID, and Current Location shared by the inner containers are assigned to the overpack.

#### Appendix A - Edit/Limit Checks and Overpack Roll-Up Functionality

- The IDC Code associated with the largest waste volume when the inner containers are grouped by IDC Code is assigned to the overpack and waste volumes are summed.
- The Waste Matrix Code associated with the largest waste volume when the inner containers are grouped by Waste Matrix Code is assigned to the overpack and the waste volumes are summed.
- The TRU alpha activity (Ci) for the overpack is automatically calculated and assigned to the overpack by summing the TRU Alpha Activity values for the inner containers.
- The TRU alpha activity uncertainty (Ci) for the overpack is automatically calculated as the square root of the sum of the squares of the TRU alpha activity uncertainties of the inner containers.
- The TRU alpha activity concentration (Ci/g) for the overpack container is automatically calculated as the overpack TRU alpha activity divided by the overpack waste weight.
- The total overpack Pu-239 FGE (g) is automatically calculated as the sum of the Pu-239 FGE values for the inner containers of an overpack container.
- The total overpack Pu-239 FGE uncertainty (g) is automatically calculated as the RSS of the Pu-239 FGE uncertainty values for the inner containers of an overpack container.
- The total overpack Pu-239 Equivalent Activity (PE-Ci) is automatically calculated as the sum of the Pu-239 Equivalent Activity values for the inner containers.
- The total overpack Decay Heat (W) is automatically calculated as the sum of the decay heats recorded for the inner containers.
- The total overpack Decay Heat Uncertainty (W) is automatically calculated as the square root of the sum of the squares of the decay heat uncertainties recorded for the inner containers.
- The overpack Fill Factor (%) is automatically based on the inner container fill factors and the volume of the overpack using the formula shown below.

Appendix A - Edit/Limit Checks and Overpack Roll-Up Functionality

$$FF_o = [\text{sum} (FF_i * V_i)] / V_o$$

where,  
FF<sub>o</sub> = Fill factor (%) for the overpack  
FF<sub>i</sub> = Fill factor (%) for the inner container  
V<sub>i</sub> = Volume (L) of inner container based on reference table  
V<sub>o</sub> = Volume (L) of overpack container based on reference table

- The overpack total gross weight (kg) is calculated as the sum of the gross weight of the inner containers, the tare weight of the implicit dunnage containers, the tare weight of the overpack container, and the overpack packaging material weight.
- The overpack total gross weight measurement error (kg) is calculated as the square root of the sum of the squares of the gross weight uncertainties of the inner containers (including actual containers and implicit dunnage containers) and the gross weight uncertainty of the overpack tare weight.
- The value for PCB Waste is assigned as follows: "Y" if one or more inner containers have PCB Waste = "Y"; "N" if all inner containers have PCB Waste = "N."
- The value for PCB Out of Service Date is assigned when overpack PCB Waste = "Y" as the earliest date of the inner container PCB Out of Service Dates.
- The value for PCB Mass is assigned when overpack PCB Waste = "Y" as the sum of the inner container PCB Mass fields.
- The value for PCB Concentration is assigned as the maximum inner container PCB Concentration.
- The value for Machine Compacted for the overpack is assigned as follows: "Y" if one or more inner containers have Machine Compacted = "Y"; "N" if all inner containers have Machine Compacted = "N."
- The content code with the greatest G-value is assigned when the overpack container is a 72-B canister and the inner containers do not all have the same content code.

## Appendix A - Edit/Limit Checks and Overpack Roll-Up Functionality

- The value of "Y" is assigned to the Chemically/Mechanically Bound field of the overpack record if the Chemically/Mechanically Bound field of ALL the inner cans has a value of "Y"; otherwise, assign a value of "N."
- The value for  $Be \leq 1\%$  is assigned by weight as follows: "N" if one or more inner containers with Be present = "Y" have  $Be \leq 1\%$  by Weight = "N" or NULL; "Y" if all inner containers with Be present = "Y" have  $Be \leq 1\%$  by weight = "Y."
- The value for Be present is assigned as follows: "Y" if one or more inner containers has Be present = "Y"; otherwise, assign "N."
- The value for  $Be \leq 100\text{kg}$  to drum overpack containers is assigned as follows: "N" if the inner drum has Be present = "Y" and  $Be \leq 100\text{kg}$  = "N" or NULL; "Y" if the inner drum has Be present = "Y" and  $Be \leq 100\text{kg}$  = "Y"; otherwise, assign null.
- The Waste Generation Date for the 72-B canister is assigned as the latest inner container Waste Generation Date.

### A.22 Overpack Data Roll-Up - Hazardous Codes

All hazardous codes assigned to the inner containers are assigned to the overpack.

### A.23 Overpack Data Roll-Up - Radionuclides

The WDS:

- Assigns all radionuclides present in the inner containers to the overpack.
- Calculates the activity (Ci) for each radionuclide assigned to the overpack as the sum of the activities recorded for the radionuclide in the inner container records (not including negative values).
- Calculates the activity uncertainty (Ci) for each radionuclide assigned to the overpack as the square root of the sum of the squares of the activity uncertainties recorded for the radionuclide in the inner container records (not including negative values).
- Calculates the mass (g) for each radionuclide assigned to the overpack as the sum of the masses recorded for the radionuclide in the inner container records (not including negative values).
- Calculates the mass uncertainty (g) for each radionuclide assigned to the overpack as the square root of the sum of the squares of the mass uncertainties



## Appendix A - Edit/Limit Checks and Overpack Roll-Up Functionality

recorded for the radionuclide in the inner container records (not including negative values).

### **A.24 Overpack Data Roll-up - Waste Material Parameters**

The WDS:

- Assigns all waste material parameters present in the inner containers to the overpack.
- Assigns steel packaging and steel liner material parameters present in the inner containers to the steel waste (iron base metal) material parameter for the overpack.
- Assigns plastic packaging material parameters present in the inner containers to the plastics waste material parameter for the overpack.
- Assigns cellulosic packaging material parameters present in the inner containers to the cellulose waste material parameter for the overpack.
- Calculates the material parameter weight (kg) for each material parameter assigned to the overpack by summing the associated material weight for each inner container and adding the associated material weight present in the overpack itself
- Assigns the steel container material parameter to the overpack and calculates the associated material parameter weight as the sum of the tare weight of the overpack container and the weight of the dunnage containers (if present).
- Calculates the Waste Weight (kg) by summing the overpack total parameter weights associated with the material parameters identified as waste parameters in the reference tables.
- Calculates the Packaging Weight (kg) by summing the overpack total parameter weights associated with the material parameters identified as packaging and liner material parameters in the reference tables.
- Calculates the Total Material Weight (kg) by summing the overpack total parameter weights for all identified material parameters.

## **APPENDIX B - WIPP EMPLACEMENT TRACKING SOFTWARE**

## Appendix B - WIPP Emplacement Tracking Software

### **B.1 Emplacement of Magnesium Oxide (MgO Sacks)**

The WIPP Emplacement Tracking Software (ETS) calculates the amount of MgO required in each room being populated with waste based on the amount of CPR included in the emplaced waste material and packaging material. The ETS displays the amount of MgO required, the amount emplaced, and the excess or deficit amount currently in the room. For full MgO traceability, the ETS also assigns and stores a unique sack ID and location data for each sack of MgO emplaced in the repository.

Other features of the ETS include automatic and manual review checks that verify that all emplaced waste has been assigned a unique location ID and has the correct status. The ETS performs automatic and manual gap checks to ensure that all empty emplacement locations are identified while it is still possible to fill them, or to indicate they are intentionally empty. The ETS performs automatic calculation and display of required MgO for expected shipments for production planning. The ETS performs user authorization checking and control to ensure that all users are properly authorized. The ETS provides full reporting capability for all open and closed room data, automatic emailing for daily report tracking, and process management support.

### **B.2 Barcode Reader**

To use the barcode reader or the ETS, the user is required to logon to the system by entering a username and password, pressing the Login button, and reading/accepting the security acknowledgement.

### **B.3 WIPP ETS Home Page**

Once a user is logged in, the WIPP ETS Home Page provides access to all emplacement tracking screens and functionality. Functional areas include shipment unload data tracking and validation, emplacement data tracking and validation for waste containers, MgO sacks and dunnage containers, review functionality for the reviewer to validate emplacement location data, and report functionality for the generation of room closure reports, open room daily reports, MgO balance reports and graphical room display reports. The Home Page also provides access to the manual gap check and manual review check functions to provide further validation of emplacement data accuracy.

The *Unload* function is used to access the Shipment Unload screen. This allows the user at the destination site to unload the payload from the shipping package.

The *Emplace* function is used to access the Emplacement screen. This allows the WIPP Waste Handling Operations user to emplace waste containers, dunnage assemblies, and MgO sacks. Section B.22 describes the manual emplacement function.

The *Review* function is used by the WIPP Waste Handling Operations user to access the Emplacement Location Review screen. This allows the user (usually a supervisor or

## Appendix B - WIPP Emplacement Tracking Software

crew leader) to review and validate the accuracy of emplacement location data for waste containers.

The *Reports* function allows the user to access the Report Selection screen to retrieve the following reports:

- Daily Report
- Room Closure Report
- MgO Balance Report
- Graphical Room Display Report

The Review Check function allows the user to access the Manual Review Check screen and manually perform a location data validation review on a specific row in the selected panel/room combination.

The Gap Check function allows the user to access the Manual Gap Check screen. The user can manually perform a gap check on a specific row in the selected panel/room combination.

### **B.4 Barcode Reader/ETS Assembly Validation Screen**

The Assembly Validation screen displays the assemblies and associated waste containers recorded in the database to be in the selected package. The user scans in or manually enters a container number from the assembly, and the ETS validates that the entered number is actually included in the displayed list. After the user enters a container ID and presses the Validate button, the ETS compares the entered value with the recorded data to validate that the entered container number is associated with one of the displayed assemblies. If the entered number is invalid (not associated with any of the displayed assemblies), the Supervisor Reset screen is displayed for the Supervisor to acknowledge the data discrepancy and reset the system before the user can continue. After the Supervisor resets the system, the display returns to the Package Unload screen for the user to select another package to unload. If the entered container number passes the validation, the Assembly Accept/Reject screen is displayed to provide the user with the ability to validate additional containers in the assembly or accept or reject the entire assembly.

### **B.5 WIPP ETS Emplacement Location Data Entry Screen**

The Emplacement Location Data Entry screen provides the user with the ability to display the current location of a container and associated assembly, assign emplacement location data to a waste container and associated assembly, or assign emplacement location data to a dunnage assembly or MgO sack. The ETS verifies that the assigned location is available for emplacement and prompts the user to enter a new location if the entered location is occupied. The software only allows emplacement where authorized for the different types of containers (TDOPs, dunnage assemblies, MgO sacks, etc.). The Emplacement Location Data Entry screen displays the MgO balance for the panel/room combination displayed on the screen. The value displayed

## Appendix B - WIPP Emplacement Tracking Software

only includes the assemblies and MgO sacks that have the approved status. The screen is accessed by selecting the Emplace option on the Home Page.

### **B.6 WIPP Barcode Reader/ETS Emplacement Location Review**

The Emplacement Location Review screen provides the user with the functionality to review location data accuracy for newly emplaced assemblies (including dunnage assemblies) and MgO sacks by location data or container number. An automatic review check is executed by the ETS at the completion of the first emplacement in each row. The ETS performs the automatic review on an entire row, two rows back from the row that triggered the automatic review. If the automatic review finds one or more locations in the row that have a status of Review or Rejected, the ETS halts all further emplacement activity until the status of these locations is updated to Accepted by a reviewer using this screen and the following Location Accept/Reject screen. After data are entered on the Emplacement Location Review screen and the Review button is pressed, the Location Accept/Reject screen is displayed to enable the reviewer to accept or reject the location data under review.

The Emplacement Location Review screen displays the MgO balance for the panel/room combination displayed on the screen. The value displayed only includes the assemblies and MgO sacks that have the status of Accepted.

### **B.7 WIPP Barcode Reader/ETS Row Status Display Screen**

The Row Status Display screen provides a graphical report that displays the status of each location in the row selected on the Manual Review Check screen. The screen does not allow modification of the status of any location. Only the reviewer, in review mode, can update the status of a location. The Row Status Display screen simply provides a quick visual of the status of the selected row to determine if the reviewer needs to update the status of specific locations in the selected row. The Row Status Display screen is automatically displayed after the Run button is pressed on the Manual Review Check screen.

### **B.8 WIPP ETS Manual Gap Check Screen**

The Manual Gap Check screen allows the user to perform a manual gap check on all locations in a selected row in a selected panel/room combination and displays a graphical report showing all empty locations (locations with no assembly or MgO sack record in the database). The manual gap check does not allow modification of the location status. The manual gap check simply provides a quick visual of all empty locations in the selected row to determine if action is required to populate the empty locations with waste material or MgO, or if data are missing for emplaced waste or MgO that occupy the locations displayed as empty. The screen is accessed by selecting the Gap Check option on the Home Page.

## Appendix B - WIPP Emplacement Tracking Software

### **B.9 WIPP Barcode Reader/ETS Row Gap Display Screen**

The Row Gap Display screen is automatically displayed by pressing the Run button on the Manual Gap Check screen. The Row Gap Display screen provides a graphical report that displays all empty locations (according to available data) in the selected row. The Manual Gap Check does not allow modification of the location status; it simply provides a quick visual of all empty locations in the selected row. The user then determines if action is required to fill the empty locations, or if data are missing for the locations that are displayed as empty.

### **B.10 Report Selection Screen**

The Report Selection screen provides access to all available WIPP ETS reports, including the Daily Report for all open rooms or any specified open panel/room combination, the Closure Report for all closed rooms or any specified closed panel/room combination, the Balance Report for MgO balance reporting on a specified room, and the Room Display Report, which graphically displays occupancy and location status for all locations in a specified range of rows in a specified panel/room combination. The software provides the following location data entry fields: Panel Number, Room Number, Handling Type, Target Excess Factor, Expire Date, and Reason.

### **B.11 Daily Report**

The Open Room Daily Report is a comprehensive report generated for a specified open panel/room combination or for all open rooms, separated into panel/room combinations. The report includes date and time the report was generated, room status at the time of report generation, all pertinent MgO data, including the MgO Safety Ratio and the calculated number of MgO sacks required for expected future shipments, total container count for each container type in the specified room, weights and volumes of compacted and non-compacted waste, percent of the panel volume limit occupied, and the amount of CPR in the room in the form of waste material and packaging material.

### **B.12 Room Closure Report**

The Room Closure Report is a comprehensive report generated for a specified closed panel/room combination or for all closed rooms, separated into panel/room combinations. The report includes date and time that the report was generated, room status at the time of report generation, all pertinent MgO data, including the MgO Safety Ratio, total container count for each container type in the specified room, weights and volumes of compacted and non-compacted waste, percent of the waste volume that is compacted, and the amount of CPR in the room in the form of waste material and packaging material.

The report only displays closed rooms and includes all of the same parameters as displayed in a Daily Report as described in Section B.11.

# Waste Data System User's Manual

## DOE/WIPP-09-3427, Rev. 2

### Appendix B - WIPP Emplacement Tracking Software

#### B.13 Manual Emplacement of Waste

**Figure B-1 – Manual Emplacement Form**

**WDS WASTE DATA SYSTEM**

Super Admin User, SUPER\_USER  
3/11/2009 8:32 AM

**DASHBOARD ACTION CENTER**

**MANUAL EMPLACEMENT**

**Containers Available for Emplacement**

Cntr Num:  Ship Program:  SEARCH

Assembly Num:  Handling Code:

Ship Num:  Dunnage: ☐

Package Num:

Assembly Num	Cntr Num	Cntr Type Desc	Pkg Num	Ship Num	Ship Prog	Handling Code	Dunnage
BN083568	BN10216149	23 - 100 GAL DRUM (DIRECT LOAD)	128	IN080186	BN	CH	N
BN083630	BN10222774	23 - 100 GAL DRUM (DIRECT LOAD)	147	IN080187	BN	CH	N
BN083660	BN10216864	23 - 100 GAL DRUM (DIRECT LOAD)	174	IN080201	BN	CH	N
BN083660	BN10216883	23 - 100 GAL DRUM (DIRECT LOAD)	174	IN080201	BN	CH	N

**Emplacement / Location Information**

Panel:  Room:  Row:  Column:  Height:  GO

Disposal Date:

Panel: 4 Room: 3 Row: 27

**DEFAULT RH**

	1i	1	2	3	4	5	6	6i
S2								
S1		MGO						
Top		DRUMS						
Middle		TDOP						
Bottom		TDOP						

Assembly Num:   
Disposal Date:   
MgO Excess Factor: 0.9  
MgO Balance: -53 (supersacks)  
MgO Qty: 61

**Containers Available for Emplacement**

Cntr Num:  Dunnage: ☐ SEARCH

Cntr Num	Cntr Type Desc	Dunnage
RMRG-EMP-OP	5 - 55 GALLON PIPE OVERPACK - 12 INCH PIPE OVERPACK	N
RMRG-EMP-OP1	13 - S100 PIPE OVERPACK	N
ROX-OP-1	14 - SWB - OVERPACK	N
WQERASDF	3 - TEN DRUM OVERPACK (TDOP) - OVERPACK	N
ARQWER	3 - TEN DRUM OVERPACK (TDOP) - OVERPACK	N
KRJ-DUN-OVERPAK	3 - TEN DRUM OVERPACK (TDOP) - OVERPACK	N

The ETS allows the user to access the Emplace Containers Underground Form from the WDS WIPP Operations Dashboard. Containers Available for Emplacement are defined as follows:

- Group 1: Waste containers shipped to WIPP, including all non-emplaced waste containers and dunnage containers in RECEIVED\_SHIP status with WIPP as the destination site.
- Group 2: Includes WIPP-generated containers and waste containers with WIPP certification, dunnage containers created for filling out emplacement assemblies, site-derived containers in APPROVED\_CERT status and overpacks generated at the WIPP site.

## Appendix B - WIPP Emplacement Tracking Software

The WIPP Operations user may search among the emplacement candidates using one or more of the following criteria:

- Group 1 containers: Shipment Number, Shipping Program ID, Package Number, Handling Code, Assembly ID, Container Number, dunnage flag.
- Group 2 containers: Container Number and dunnage flag.

A mechanism is available to the user for selecting a container for emplacement. A container that is available for emplacement is defined as an active container. When a Group 1 container is selected for emplacement, the ETS uses visual attributes to indicate that the entire associated assembly has been selected.

For each Group 1 container, the software displays the following fields:

- Shipment number
- Shipping program ID
- Package number
- Handling code
- Assembly ID
- Container number
- Description of the container type
- A flag indicating whether or not the container is dunnage

For each Group 2 container, the software displays the following fields:

- The assembly ID to which the container is assigned
- The container number
- A description of container type
- A flag indicating whether or not the container is dunnage

The Manual Emplacement Form allows the user to update and display the location data for previously emplaced assemblies. The package number for the payload with which the assembly is associated is displayed. The form also allows the user to indicate the emplacement of an MgO sack or an MgO stack. The ETS prompts the Waste Operations user for the MgO sack type, if more than one sack type is listed in the database as authorized for use. If only one type is available, the ETS defaults to that sack type.

The form displays a diagram representing CH emplacement locations by panel and room. The CH emplacement diagram depicts the columns and height in a matrix format, with each field representing a physical column/height emplacement location for CH assemblies and MgO sacks in the displayed panel, room, and row. The MgO emplacement data previously saved to the database are displayed without specific row/column/height data for the displayed panel and room. The default location depicted in the CH emplacement diagram is the panel, room, and row location of the first unfilled CH emplacement location. All rows and columns in the displayed CH emplacement



## Appendix B - WIPP Emplacement Tracking Software

location may be viewed. The CH emplacement diagram shows occupied emplacement locations and the type of container(s) emplaced in that location. The emplacement diagram depicts TDOPs as occupying two height locations. This is currently done by shading the box in red and using a one-word container type description as shown in Figure B-1. If the handling code of the "active container" is CH, or if MgO is being emplaced, the user can specify an emplacement location using the CH emplacement diagram or the CH emplacement location fields.

The form displays a diagram of RH emplacement locations by panel and room. The RH emplacement diagram depicts 125 boreholes for the displayed panel and room. The default location depicted in the RH emplacement diagram is the panel, room, and borehole location of the first unfilled borehole. The user can return to the default RH emplacement location. The RH emplacement diagram depicts occupied boreholes with a field shaded in red. If the handling code of the active container is RH, the user can specify an RH emplacement location, using the RH emplacement diagram and the RH emplacement location fields. The form displays the RH emplacement diagram when the Handling Code of the active container is RH, and the CH emplacement diagram when the Handling Code of the active container is CH, or when MgO is being emplaced. The user can update the Disposal Date manually. The user can populate the Disposal Date field with the default value of the current system date. The user can switch the displayed emplacement diagram from CH to RH and vice versa.

The user can initiate the data validation of the emplacement data displayed for the active container. The ETS automatically verifies that a disposal date in the format mm/dd/yyyy has been entered prior to database storage. The user receives an error message if a valid disposal date has not been entered, and emplacement data storage is not performed.

If the active container is a waste container, the ETS automatically verifies that the waste container belongs to a complete assembly. If the waste container does not belong to a complete assembly, a message is displayed describing the error, and the emplacement data storage is not performed. The ETS automatically verifies that the specified panel and room values exist and are not expired in the database Locations reference table; the specified emplacement location is not occupied; and the height location entered is "S1" for an MgO sack or "S1" and "B" for an MgO stack. If the height location is not "S1" or "B," the ETS provides a warning that a potentially invalid location was entered. If an occupied emplacement location is specified, the form displays a message stating the error, and the emplacement data storage is not performed.

If all emplacement data validations pass, the ETS indicates successful validation by displaying the active container as occupying the assigned position in the emplacement diagram and associated emplacement location data fields. The ETS then removes the active waste container, along with the other containers in its associated assembly, from the group of containers available for emplacement. The user then may commit the emplacement data to the database in a user-initiated action that is distinct from the data validation function.

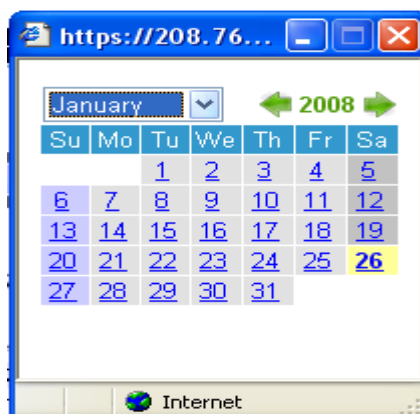
## **APPENDIX C - REPORTS**

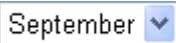

## Appendix C - Reports

### C.1 Use of the Date Calendar Function

When establishing parameters to run reports in the WDS, the user has the option to filter the report being run with a specified date range. This is accomplished using the date calendar function. The user clicks the  icon to open the calendar. The calendar for the current month with the current date highlighted appears on the screen.

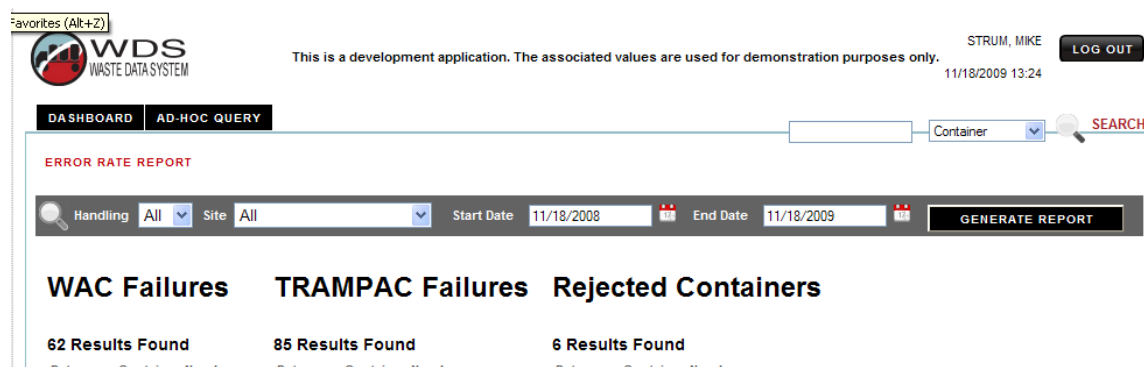
**Figure C-1. WDS Date Calendar Example**



To insert a date into the date field, the user clicks the desired day on the calendar. If the closure date occurred during the previous month, the user selects the month from the dropdown list to toggle to the previous month.   If the either the start date or end date for the previous calendar year is required, the user uses the green arrows to toggle back to previous years. When the day, month, and year have been selected, the user clicks on the highlighted day to insert the date into the field on the report form.

### C.2 CBFO Reports - Error Rate Report

**Figure C-2. CBFO Error Rate Report**



## Appendix C - Reports

Access to the Error Rate report is restricted to the CBFO user group. The report displays results for the last 12 months of activity. The dropdown menus on the form can be used to restrict or filter the output data by site, waste handling type (e.g., CH, RH, or All), or date range. After all report parameters are selected or entered onto the form, the user runs the report by selecting the Generate Report button. The report lists the container number and date of container records that are currently failing the WAC evaluation, the container number and date of container records that are currently failing the TRAMPAC evaluation, and the container number and date that container records were rejected.

### C.3 CBFO Reports - Shipping and Disposal Status Report – Combined Emplaced Volume, Panel Status and Shipments to Date

**Figure C-3. CBFO Shipping and Disposal Status Report**

WDS WASTE DATA SYSTEM

Super Admin User, SUPER\_USER 3/11/2009 9:18 AM

DASHBOARD ACTION CENTER

Container SEARCH

#### SHIPPING AND DISPOSAL STATUS REPORT

Week including 03/15/2009 GENERATE REPORT

#### Weekly Emplacement

Container Type	Emplaced Count
100-GALLON DRUM	0
55-GALLON DRUM	0
85-GALLON DRUM	0
STANDARD WASTE BOX	0
TEN DRUM OVERPACK	0

#### Emplacement Counts

Handling Code	Count	Volume
CH	27502	38223.42 m <sup>3</sup>
RH	158	139.26 m <sup>3</sup>

#### Total Shipments to Date

Site	Shipments
BN	2142
C1	898
C2	14
C3	48
C4	322
C5	18
C9	155
IN	595
LA	70
RF	2044
RL	412
SR	15
<b>TOTAL</b>	<b>6733</b>

#### Panel Status Report

Panel	Status	Active Rooms	CH Volume (m <sup>3</sup> )	RH Volume (m <sup>3</sup> )	CH Filled %	RH Filled %	MgO Excess Factor	100-GALLON DRUM	55-GALLON DRUM	72-B CANISTER	85-GALLON DRUM	STANDARD WASTE BOX	TEN DRUM OVERPACK
1	Closed		3660.59	0.0	20.3%		1.79	0	38696	0	0	1239	40
2	Active	2,5	13399.28	0.0	74.4%		2.19	1279	24507	0	0	3175	1450
3	Closed		14314.56	0.0	76.3%		2.13	5409	8985	0	0	1731	2227
4	Active	2,3	6934.69	137.27	37.0%	34.3%	1.33	6328	7206	155	0	1124	846
			38309.12	137.27									

DASHBOARD | ACTION CENTER | USER PREFERENCES

INSTANCE: wdtest  
BUILD: WDS\_20090310

## Appendix C - Reports

Access to the Shipping and Disposal Status report is restricted to the CBFO user group. The ending date for report output, by default, is based on the current date. The user may select a different report ending date using the calendar. To run the report, the user selects the Generate Report button. The report displays the number of emplaced containers for the week, the total number of shipments to date from all sites, and a Panel Status report for active and closed panels in the WIPP underground.

Panel Status Report: The panel status section of the Shipping and Disposal Status report displays the panel number and status, the total container volume (m<sup>3</sup>) for CH and RH waste handling types for each active and closed panel, the portion of the panel filled as a percentage value for active and closed panels, the active rooms for each active panel, and the drum equivalent emplacement totals for active panels. The container type totals displayed are:

- 55-gallon drums
- 85-gallon drums
- 100-gallon drums
- SWBs
- TDOPs
- RH 72-B Canisters
- MgO Safety Factor for active and closed panels

Total Shipments to Date: The Total Shipments to Date section of the Shipping and Disposal Status report displays the total number of shipments received by site and the total number of shipments received from all sites.

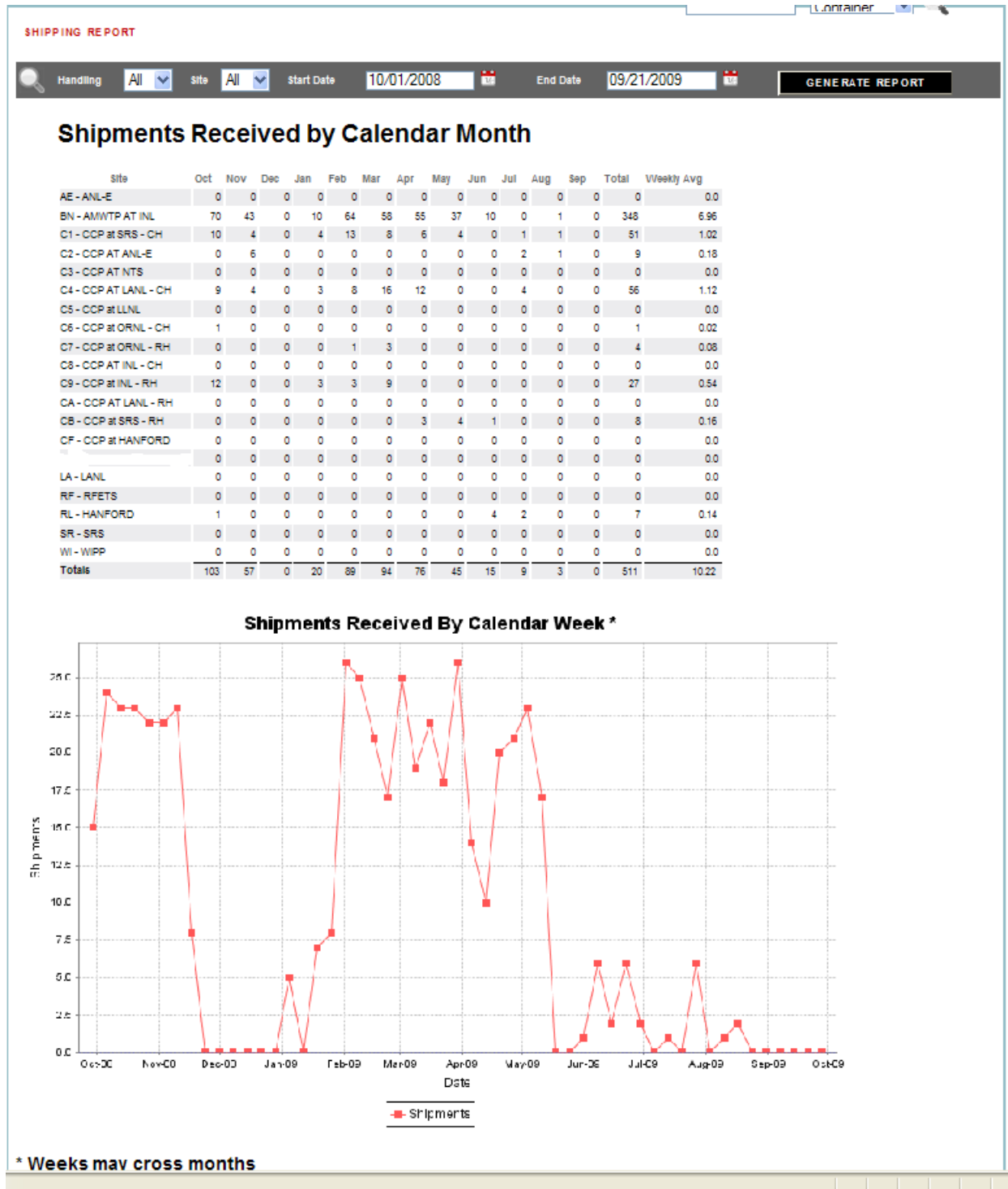
Emplacement Counts: This section of the report displays the total number of CH containers and the total number of RH canisters that have been emplaced in the WIPP underground. The report displays the total emplaced container volume (m<sup>3</sup>) for both CH and RH Waste Handling Types.

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## Appendix C - Reports

### C.4 CBFO Reports - Shipping Report

Figure C-4. CBFO Shipping Report Example



## Appendix C - Reports

Access to the Shipping report is restricted to the CBFO user group. The report displays data based on the combination of query parameters selected by the user. The report, by default, displays results for the all shipping sites, all waste handling types and the last 12 months of activity. The user may re-query based on a specified date range and restrict data to the specified date range. After establishing the report criteria using the dropdown menus on the form, the user selects Generate report button to create the report. The report displays the following data.

- Total number of shipments received at WIPP per month by shipper site
- Total number of shipments received at WIPP by site
- Average number of weekly shipments at WIPP by site
- Total number of shipments received at WIPP per month from all shipping sites
- Total number of shipments received at WIPP from all sites
- Average number of shipments received at WIPP per week from all shipping sites
- A graph displaying the weekly shipping rate

The weekly shipping rate is the average number of total shipments received at WIPP from all shippers per week. The following query options are available to the user:

- Waste Handling Type
- Shipper Site
- Shipment Received Date Range

### C.5 Certification - Container Certification Approval/Rejection Report

**Figure C-5. Certification Approval/Rejection Report Form Example**

The screenshot shows the WDS (Waste Data System) interface. At the top left is the WDS logo. At the top right, it says "Super Admin User, SUPER\_USER" with "HELP" and "LOG OUT" buttons. Below this is a navigation bar with "DASHBOARD" and "ACTION CENTER" tabs. The main heading is "CONTAINER CERTIFICATION APPROVAL/REJECTION REPORT". Below this is a search bar with a "Container" dropdown and a "SEARCH" button. The main form area has a "Certification Program ID" dropdown set to "All", "Start Date" set to "03/03/1999", and "End Date" set to "3/11/2009". There is a "Generate Report..." button. At the bottom, there is a footer with "DASHBOARD | ACTION CENTER | USER PREFERENCES" and a box showing "INSTANCE: wdstest" and "BUILD: WDS\_20090310".

## Appendix C - Reports

The user may generate the Container Approval/Rejection report using the following parameters:

- Certification Program ID
- Start date
- End date

After selecting the desired Certification Program ID and the date criteria, the user selects the Generate Report button on the form to run the report. The report displays the following data for all containers rejected or approved in characterization and/or certification during the time period specified in the selection criteria, and that meet the additional selection criteria:

- Certification Program ID
- Status
- Update Date
- Container Number, and
- Approver ID

The container information is grouped by Certification Program ID, with the Certification Program ID groupings listed in ascending order. Within each Certification Program ID group, the containers are grouped by status. The status groups are displayed in the following order:

- Approved Characterization
- Rejected Characterization
- Approved Certification
- Rejected Certification

Within each status group, the containers are listed in ascending order by Update Date, then container number.




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### Appendix C - Reports

#### C.6 General Use Reports - Canister Data Report



Figure C-6. Canister Data Report Example




Super Admin User, SUPER\_USER  
3/11/2009 9:50 AM


HELP  
LOG OUT


DASHBOARDACTION CENTER

Container   SEARCH

**ROX1210-4**  
Type: 11 - RH CANISTER WITH REMOVABLE LID - OVERPACK


Current Status


Container Status: Pending Certification Data Approval  Edit  
Certification Date: 12/10/2008  
Waste Handling Code: RH  
Disposal Date:


 View PDF

Current Location Site:	WI	Neutron Dose Rate (mrem/hr):	125.0	FGE (g):	7.890E-1	Gross Weight (kg):	588.64
Generator Site:	AE	Beta Gamma Dose Rate (mrem/hr):	220.0	FGE Uncertainty (g):	2.900E-1	Gross Weight Uncertainty (kg):	33.66
Destination Site ID:	WI	Total Dose Rate (mrem/hr):	345.0	Compacted?	N	Decay Heat (W):	2.840E-3
Shipping Program ID:	C9	Dunnage Containers:	2			Decay Heat Uncertainty (W):	8.800E-4
Certification Program ID:	C9						

Evaluations

☐ TRAMPAC  [View Latest Results](#)

☐ Edit Limit Checks  [Execute Checks](#)

**Certification Data Values**

Waste Stream Profile Code: ID-ANLE-SS000

Waste Type Code: MTRU

IDC Code: 001

Waste Matrix Code: SS400

WAC Revision Number: 6.1

Fill Factor (%): 11.74

TRU Alpha Activity (Ci): 3.610E-2

TRU Alpha Activity Uncertainty (Ci): 1.250E-2

TRU Alpha Activity Concentration (Ci/g): 2.087E-6

PU239 Equivalent Activity (PE-Ci): 3.820E-2

Alpha Surface Contamination (dpm/cm<sup>2</sup>): 1

Beta/Gamma Surface Contamination (dpm/cm<sup>2</sup>): 1

PCB Waste? N

PCB Mass (kg):

PCB Concentration (ppm):

PCB Out of Service Date:

Be Present? Y

Be <= 1% by weight? Y


Be mass <= 5kg? Y


Be mass <= 18.14kg? Y

Be mass <= 25kg? Y

Be mass <=100kg? Y

**Certification Comments**

 Radionuclide

**Transportation Data Values**

Closure Date: 12/10/2008

Vent Date: 12/10/2008

Shipment Purpose: Disposal

Waste Generation Date:

Content Code: ID322A

U-235 FEM (g):

U-235 FEM Uncertainty (g):

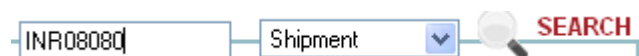
Be Chemically/Mechanically Bound? N

Filters

Filter Model Number	Filter Diffusivity (mol/s/mf)	Quantity	Install Date
NF007	3.70E-6	3	12/10/2008
NF007	3.70E-6	3	12/10/2008
NF007	3.70E-6	3	12/10/2008

## Appendix C - Reports

To access a Canister Data report directly from the dashboard, the user inputs a known RH-72B Shipment Number in the block at the top of the form, selects Shipment from the dropdown menu, and selects Search.

A screenshot of a search form. It features a text input field containing 'INR08080', a dropdown menu with 'Shipment' selected, a magnifying glass icon, and a red 'SEARCH' button.

A Shipment Data report will appear on the screen. The user selects the Payload number to drill down to the HTML version of the Canister Data report. Alternatively, if the user knows the RH-72B Payload Number for which the report is to be created and generated, the user inputs the number in the block at the top of the Dashboard form, selects Payload from the dropdown menu, and selects Search.

A screenshot of a search form. It features a text input field containing 'ID0160', a dropdown menu with 'Payload' selected, a magnifying glass icon, and a red 'SEARCH' button.

A Payload Data report appears on the screen. The user then selects the Container number link to drill down to the HTML version of the Canister Data report. The report displays the following information:

- Container Number, Container Type, and Waste Handling Code
- Container status (e.g., pre-submittal, pending approval, approved)
- Current Location Site, Generator Site, Destination Site, Certification Program ID, Shipping Program ID
- Shipment Purpose (Characterization, Certification, Treatment, Disposal)
- Gross Weight (kg), Gross Weight Uncertainty (kg)

---

### NOTE

If weight values are entered for the canister record, the WDS displays the user-supplied values. Otherwise, the WDS displays the rolled-up values.

---

- Neutron Dose Rate (mrem/hr), Beta Gamma Dose Rate (mrem/hr), and Total Dose Rate (mrem/hr)
- Rolled-up values for the following fields: FGE (g), FGE Uncertainty (g), Decay Heat (W), Decay Heat Uncertainty (W), TRU Alpha Activity (Ci), TRU Alpha Activity Uncertainty (Ci), TRU Alpha Activity Concentration
- Certification Date, Vent Date and Closure Date
- Disposal Date and Emplacement Location Information: panel, room, borehole

## Appendix C - Reports

- Waste Stream Profile Number, Waste Type Code, IDC Code, Waste Matrix Code, and WAC Revision Number
- Alpha Surface Contamination (dpm/cm<sup>2</sup>), Beta/Gamma Surface Contamination (dpm/cm<sup>2</sup>)
- PCB Waste Flag, PCB Mass (kg), PCB Concentration (ppm), PCB Out of Service Date
- Be Present Flag, Be  $\leq$  1% by weight, Be Chemically/Mechanically Bound Flag
- Governing Packing Fraction (compaction level):  $\leq$  20% (non-compacted);  $>20\%$  and  $\leq 70\%$  (partial);  $>70\%$  (full)
- Filter records (fields as defined for the Container Data report)
- Radionuclide records (fields as defined for the Container Data report)
- Material parameter records (fields as defined for the Container Data report) for the overpack
- Hazardous codes (hazardous code and description)
- A list of containers associated with the canister, along with the number of assumed dunnage containers, which includes the container number, type code, content code, gross weight + error, FGE + 2xError

For the payload, the report displays Payload Number, Assembly Number, and Complete flag. The report displays all downstream process entities to which the canister has been associated (payload and/or shipment), as applicable.

The HTML version of the canister data report provides drill-down access to the Container Data report for each container associated with the canister, the latest TRAMPAC Evaluation Overpack-Level Results, if available, the status, and applicable exit codes from the latest container certification edit/limit check evaluation, if applicable.

## Appendix C - Reports

### C.7 General Use Reports – Waste Container Data Report

**Figure C-7. Waste Container Data Report Form Example**

The screenshot displays the WDS (Waste Data System) interface. At the top, the WDS logo is on the left, and the user information 'Super Admin User, SUPER\_USER' and the date '3/11/2009 9:52 AM' are on the right. Below the user information are 'HELP' and 'LOG OUT' buttons. The main navigation bar includes 'DASHBOARD' and 'ACTION CENTER'. A search bar is present with a 'Container' dropdown and a 'SEARCH' button. The main content area is titled 'WASTE CONTAINER DATA REPORT'. Below this, there is a search bar for 'Waste Stream' with the value 'BLCHDN.001' and a 'SEARCH' button. The results section is titled 'Containers Submitted For Characterization' and shows '8 Containers For Waste Stream: BLCHDN.001'. A list of container numbers is displayed: LL85101434TRU, LL85301418TRU, LL85401535TRU, LL85501511TRU, LL85501554TRU, LL85701416TRU, LL85701510TRU, and LL85701534TRU. At the bottom, there is a navigation bar with 'DASHBOARD', 'ACTION CENTER', and 'USER PREFERENCES'. On the right side of the bottom bar, it shows 'INSTANCE: wdstest' and 'BUILD: WDS\_20090310'.

To generate a Waste Container Data report, the user selects Reports from the Dashboard. A link to the Waste Container Data report form is then shown in the list of available reports. When the user selects Waste Container Data Report, a form (as shown in Figure C-7) appears on the screen. If the container number for which the container data report is to be generated is known, the user enters the container number in the block at the top of the form and selects Search. The database will generate a report for the specified container.

Alternatively, the user may select a waste stream from the dropdown menu on the form and press the Search button to create a list of waste containers associated with the specified waste stream. The user then selects a container from the list to create a waste container data report. The report is available in both HTML and PDF format and displays the following information:

- Container Number, Container Type, Waste Handling Code
- Container status
- Current Location Site, Generator Site, Destination Site, Certification Program ID, Shipping Program ID

## Appendix C - Reports

- Shipment Purpose (Characterization, Certification, Treatment, Disposal)
- Gross Weight and Gross Weight Uncertainty (kg)
- Neutron Dose Rate, Beta Gamma Dose Rate, and Total Dose Rate (mrem/hr)
- FGE and FGE Uncertainty (g)
- Decay Heat and Decay Heat Uncertainty (W)
- Machine Compacted Waste Flag, Separation OK Flag, Polyethylene Density  $\leq 70\%$  of Theoretical Full Flag, Polyethylene Density  $\leq 20\%$  of Theoretical Full Flag, Aqueous Material Flag
- Certification Date
- Disposal Date and Emplacement Location Information: Panel; Room; row, column, and height (CH values), or borehole (RH value)
- Waste Stream Profile, Waste Type Code, IDC Code, Waste Matrix Code, and WAC Revision Number, Waste Stream BIR ID, Waste Stream MWIR ID
- TRU Alpha Activity and TRU Alpha Activity Uncertainty (Ci)
- TRU Alpha Activity Concentration (Ci/g)
- Pu-239 Equivalent Activity (PE-Ci)
- Alpha Surface Contamination (dpm/cm<sup>2</sup>), Beta/Gamma Surface Contamination (dpm/cm<sup>2</sup>)
- U-235 FEM and U-235 FEM Uncertainty (g) for RH 72-B Canisters
- Fill Factor (%)
- PCB Waste Flag, PCB Mass (kg), PCB Concentration (ppm), PCB Out of Service Date
- Be Present Flag, Be  $\leq 1\%$  by weight Flag, Be mass  $\leq 100\text{kg}$  Flag, and Be Chemically/Mechanically Bound Flag
- TRUCON Code and Shipping Category for CH containers, and the Content Code for RH containers
- Closure Date, Vent Date, Waste Generation Date (RH 72B only), and Process Knowledge flag
- Liner Exists Flag, Liner Hole Size (mm) and Liner Lid Present Flag

## Appendix C - Reports

- Aspiration Method for CH containers
- Measured FGGR, Truncated FGGR Test Indicator flag, Truncated FGGR Test Period, and Measured TGRR

The report displays the following values for each radionuclide record associated with the container:

- Radionuclide
- Activity and Activity Uncertainty (Ci)
- Mass and Mass Uncertainty (g)

The report displays the following values for each filter record associated with the container:

- Filter Model Number
- Filter Diffusivity (mol/s/mf)
- Quantity
- Install Date

For each container sample record, the report displays:

- Sample ID
- Labor Code ID
- Sample Type
- Sample Date
- Layer Sampled
  - 0 = Container Headspace
  - 1 = Rigid Liner Headspace
  - 2 = Pipe Component Headspace)

For each analyte record associated with a sample record, the report displays:

- CAS Number
- Analyte Description
- Concentration (ppm)
- Analysis Date
- Analysis Method, and
- Reporting Flags (J, B, D, E, U, N/A)

## Appendix C - Reports

---

### **NOTE**

The Data Reporting Flags are:

- B Analyte detected in blank (Organics/Headspace gases)
  - B Analyte blank concentration greater than or equal to 20 percent of sample concentration prior to dilution corrections (Metals)
  - E Analyte exceeds calibration curve (Organics/Headspace gases)
  - J Analyte less than PRQL but greater than or equal to MDL (Organics/Headspace gases)
  - J Analyte greater than or equal to IDL but less than 5 times the IDL before dilution correction (Metals)
  - U Analyte was not detected and value is reported as the MDL (IDL for Metals)
  - D Analyte was quantitated from a secondary dilution, or reduced sample aliquot (Organics/Headspace gases)
  - Z One or more QC samples do not meet acceptance criteria
- 

For each container material parameter record, the report displays:

- Material Parameter
- Material Parameter Description
- Weight (kg)

For each container hazardous code record, the report displays the hazardous code and the hazardous code description.

For each container assay record, the report displays:

- Labor Code
- Assay Method
- Assay Date
- Assay Method Description

## Appendix C - Reports

For each container nondestructive examination record, the report displays:

- Labor Code
- Nondestructive examination method
- Examination date
- Method description

For each RH 72-B container inner layer record, the report displays:

- Inner layer ID
- Inner layer type
- Parent ID
- Decay Heat (W), Decay Heat Uncertainty (W)
- Closure Date, Vent Date, Filter Diffusivity (mol/s)
- FGGR (mol/s)
- Hydrogen/methane
- Comments for the container
- TRAMPAC Evaluation Container-Level Results, if available
- Status and applicable exit codes from the latest container certification edit/limit check evaluation, if applicable
- All downstream process entities to which the container has been associated (overpack, payload, and/or shipment), as applicable. For overpack, the report displays the Overpack Number, Overpack Type and Overpack Container Status

---

### **NOTE**

The HTML version of the Container Data report provides access to the report for the overpack, payload, canister, or shipment to which the container is associated.

---

## **C.8 General Use Reports - Overpack Data Report**

The Overpack Data report is available in both HTML and PDF format. The report displays the following information:

- Container Number, Container Type, Waste Handling Code
- Container status



## Appendix C - Reports

- Current Location Site, Generator Site, Destination Site, Certification Program ID, Shipping Program ID
- Shipment Purpose (Characterization, Certification, Treatment, Disposal)
- Gross Weight (kg), Gross Weight Uncertainty (kg). If values are entered for the overpack record, the software displays the user-supplied values. Otherwise, the software will display the rolled-up values
- Neutron Dose Rate (mrem/hr), Beta Gamma Dose Rate (mrem/hr), and Total Dose Rate (mrem/hr)

Rolled-up values are displayed for the following fields:

- FGE (g), FGE Uncertainty (g)
- Decay Heat (W), Decay Heat Uncertainty (W)
- Compacted Flag
- Certification Date, Vent Date and Closure Date
- Disposal Date and Emplacement Location Information: Panel; Room; row, column, and height (CH values), or borehole (RH value)
- Waste Stream Profile, Waste Type Code, IDC Code, Waste Matrix Code, and WAC Revision Number for the overpack
- Alpha Surface Contamination (dpm/cm<sup>2</sup>), Beta/Gamma Surface Contamination (dpm/cm<sup>2</sup>)
- PCB Waste Flag, PCB Mass (kg), PCB Concentration (ppm)
- Be Present Flag, Be  $\leq$  1% by weight Flag, Be mass  $\leq$  100kg Flag (drum overpack only), Separation OK Flag and Be Chemically/Mechanically Bound Flag
- The filter records (fields as defined for the Container Data report)
- Rolled up radionuclide records (fields as defined for the Container Data report)
- Material parameter records (fields as defined for the Container Data report)
- Rolled up hazardous codes (hazardous code and description)
- The list of containers associated with the overpack, along with the number of assumed dunnage containers

## Appendix C - Reports


- Summary data for each container associated with the overpack: container number, type code, TRUCON Code, shipping category, shipping period, gross weight + error, FGE + 2xError

The HTML version of the Overpack Data report provides access to the Container Data report for each container associated with the overpack. The report displays the latest TRAMPAC Evaluation Overpack-Level Results, if available, with the status and applicable exit codes from the latest container certification edit/limit check evaluation, if applicable. The report displays all downstream process entities to which the overpack has been associated (payload and/or shipment), as applicable. For payload, the report displays Payload Number, Assembly Number, and Complete flag. For shipment, the HTML version of the Overpack Data report provides access to the report for the payload or shipment to which the overpack is associated.

## Appendix C - Reports

### C.9 General Use Reports - Payload Data Report

**Figure C-8. Payload Data Report Example**



**WDS**  
WASTE DATA SYSTEM

Super Admin User, SUPER\_USER

3/11/2009 9:58 AM


[HELP](#)

[LOG OUT](#)

**DASHBOARD** | **ACTION CENTER**

Container  [SEARCH](#)

**PAYLOAD DATA REPORT**



**DM0283**

Package Type: TRUPACT

Current Location Site: RL

Destination Site ID: WI

Shipping Program ID: RL

Package Number: 125

Payload Type: TRUPACT - 14 55GD

Payload Complete? true

Surface Dose Rate (mrem/hr): 100000000

Dose Rate @1m (mrem/hr): 20.3

Dose Rate @2m (mrem/hr): 100000000

Alpha Surface Contamination (dpm/cm<sup>2</sup>): 20.3

Beta Gamma Surface Contamination (dpm/cm<sup>2</sup>): 20.3

ICV Closure Date: 12/25/1988 12:00:00 AM

OCA Lid Number:

Handling Material Weight (kg):

Handling Material Weight Uncertainty (kg):


Radionuclide Reportable Quantity?


Radionuclide Highway Route Controlled Quantity?

DOT Description:

Shipment Number: [RL080047](#)

**Evaluations**

 [View Latest Results](#)

 [Execute Checks](#)

Assembly ID	Containers in Assembly				
	Container Number	TRUCON Code / Shipping Category	Shipping Period (days)	Gross Weight + Err (kg)	FGE + 2X Err (g)
DM0283A	<a href="#">H-0048299</a>	RH225J / 3001090106	60	84.50	6.876E1
	<a href="#">H-0048310</a>	RH225J / 3001090106	60	72.60	2.532E1
	<a href="#">H-0048329</a>	RH225J / 3001090106	60	56.50	3.936E1
	<a href="#">H-0048332</a>	RH225J / 3003400106	60	72.60	3.116E0
	<a href="#">H-0048333</a>	RH225J / 3001090106	60	104.85	1.332E1
	<a href="#">H-0048341</a>	RH225J / 3003400106	60	78.20	1.166E1
	<a href="#">H-0049026</a>	RH225J / 3001090106	60	65.35	9.870E1
DM0283B	<a href="#">H-0048308</a>	RH225J / 3003400106	60	57.90	1.700E0
	<a href="#">H-0048931</a>	RH225B / 3003400259	60	60.00	4.398E-2
	<a href="#">H-0049029</a>	RH225J / 3003400106	60	49.30	1.014E1
	<a href="#">H-0049030</a>	RH225J / 3003400106	60	41.35	1.558E1
	<a href="#">H-0049043</a>	RH225J / 3003400106	60	47.55	7.616E0

The Payload Data report is available in both HTML and PDF format. The report contains the following information:

- Payload ID, Current Location Site, Destination Site, Package Type, Package Number, packaging payload container group, and Payload Complete Flag

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## Appendix C - Reports

- Current Location Site, Destination Site, and Shipping Program ID for the payload
- Package Number, Payload Type, and Payload Complete Flag
- The report displays the following payload values:
  - Surface Dose Rate (mrem/hr), Dose Rate @ 1m (mrem/hr), Dose Rate @ 2m (mrem/hr)
  - Alpha Surface Contamination (dpm/cm<sup>2</sup>), and Beta Gamma Surface Contamination (dpm/cm<sup>2</sup>)
  - ICV Closure Date and OCA Lid Number
- Handling Material Weight (kg) and Handling Material Weight Uncertainty (kg)
- Radionuclide Reportable Quantity, Radionuclide Highway Route Controlled Quantity, and DOT Description
- The assembly ID for each assembly within the payload

For each assembly, the report displays the following for each container within the assembly: Container ID, TRUCON Code, Shipping Category, shipping period, gross weight + error, FGE + 2 x Error.

The report provides drill-down access to the Container Data report for each container associated with the assembly or RH canister with the latest TRAMPAC Payload evaluation results, if applicable.

The HTML version of the Payload Data report provides access to the shipment data report to which the payload is associated.

## Appendix C - Reports


### C.10 General Use Reports - Shipment Data Report

Figure C-9. Shipment Data Report Example

**WDS WASTE DATA SYSTEM** Super Admin User, SUPER\_USER 3/11/2009 10:03 AM [HELP](#) [LOG OUT](#)

**DASHBOARD ACTION CENTER** Container [SEARCH](#)



#### SHIPMENT DATA REPORT

 **RL080047**

**Current Status**  
Shipment Status: **Shipment Data Completed** Waste Handling Code: **CH**  
DA Approved? **Y** Confirmed? **Y** Finalized? **Y**  
Send Date: **01/01/1969 00:00:00** Receipt Date:

**Reports**  
[Shipment Data](#)  
[Shipment Summary](#)  
[PATCDs](#)  
[PCTCDs](#)

Current Location Site: <b>RL</b>	Manifest: <b>99999</b>	Limited Weight? <b>N</b>	Total Shipment Weight (kg): <b>25,470.94</b>
Destination Site ID: <b>WI</b>	Transporter: <b>TRI-STATE</b>	Limited FGE? <b>N</b>	Total Shipment PE-Ci: <b>5.781E1</b>
Shipping Program ID: <b>RL</b>	Tractor: <b>C-26</b>	Limited Gas Generation? <b>N</b>	Governing Shipping Period (days): <b>60</b>
	Trailer: <b>C-301</b>	Limited Other? <b>Y</b>	High Wattage? <b>N</b>
		Comments: <b>THIS COMMENT IS NO LONGER NULL.</b>	PCB Waste? <b>N</b>

**Evaluations**  
☐ TRAMPAC  [View Latest Results](#)  
☐ Edit Limit Checks  [Execute Checks](#)

[Shipment Radionuclide Information](#)  
[Payload Number: DM0283](#)  
[Payload Number: DM0284](#)

[DASHBOARD](#) | [ACTION CENTER](#) | [USER PREFERENCES](#) **INSTANCE: wdstest BUILD: WDS\_20090310**

The Shipment Data report is available in both HTML and PDF format. The report displays the following fields:

- Shipment Number, Current Location Site, Destination Site, and Shipping Program ID
- Manifest Number, Transporter, Tractor, Trailer, and Comments
- Shipment status (New, Pending Approval, Approved, Complete, Received, or Emplaced)

#### NOTE

If the shipment is not in Complete or a later status, the report displays the status for DA approval, Confirmation, and Shipment data finalized.

- Send date and receipt date

## Appendix C - Reports

- Limited Weight Flag, Limited FGE Flag, Limited Other Flag, Limited Gas Generation Flag
- Total shipment weight (kg)
- Total PE-Ci for the shipment
- The governing shipping period for the shipment, defined as the minimum shipping period for the associated payloads

---

### **NOTE**

If the governing shipping period for the shipment is ten days, the report indicates that it is a controlled shipment. If one or more of the payloads associated with the shipment contain TRAMPAC-defined special case TRUCON Codes, the report indicates that it is a high-wattage shipment.

---

- A flag indicating the presence of PCBs in one or more of the associated payloads
- List of payloads assigned to the shipment

When the user click on a Payload link, the report displays the following payload data fields for each payload in the shipment:

- Payload ID
- Site ID
- Payload type
- Package number
- Package type
- ICV closure date
- Total payload FGE+2xError
- Payload FGE limit
- Total Pu-239 Equivalent Activity
- Assembly IDs assigned to each displayed payload package number
- Number of payload containers in each displayed assembly ID
- Number of dunnage containers in each displayed assembly ID

## Appendix C - Reports

- Controlled Shipment flag for each assembly
- Shipping period for each assembly
- Radionuclide information:
  - Activity and Percent of Total Payload Activity for all radionuclides in the shipment
  - Total Payload Activity for the displayed radionuclides

For each payload associated with the shipment, the report contains:

- Each unique waste stream profile number, along with its associated waste stream description, among the set of containers assigned to the payload
- Set of reported hazardous codes, along with their associated textual descriptions, recorded for the containers assigned to the payload.

When the user clicks the View Latest Results icon, the report displays the latest the TRAMPAC Payload evaluation results and TRAMPAC Shipment evaluation results, if applicable, with the latest shipment edit/limit check evaluation results, if applicable.

The HTML version of the shipment data report shall provide access to the payload data report for each payload within the shipment.

### C.11 Packaging Reports - Payloads of Interest Report

**Figure C-10. Payloads of Interest Report Example**

Super Admin User, SUPER\_USER  
3/11/2009 10:05 AM  
HELP  
LOG OUT

DASHBOARD ACTION CENTER

PAYLOADS OF INTEREST REPORT

Start Date 02/01/2008 End Date 3/11/2009 Flammability Index > % of Limit 90  
AFGC (%) < 3 Hydrogen Concentration (%) > 1 Decay Heat (w) > 1  
Total Payload FGE (g) > 325 Number of TDOP Filters < 9 Number of Drum Filters > 1  
VIEW LIST  
EXPORT PDF

Payloads Of Interest

Payloads with Inner Container CHTES Results of Interest: 54 Records

Payload Number	Shipping Program	Current Location	Destination Site	Payload Type	Container	Flammability Index	AFGC (mol fr)
20157	BN	BN	WI	TRUPACT - 6 100GD	BN10219064	2059	0.0253444791552407
20185	BN	BN	WI	TRUPACT - 1 TDOP	10191750	2456	0.0232841701967084
20199	BN	BN	WI	TRUPACT - 1 TDOP	10185937	2742	0.0297801191371653
20199	BN	BN	WI	TRUPACT - 1 TDOP	10201840	0	0.05

## Appendix C - Reports

When the user selects Reports from the Packaging Dashboard, the form appears on the screen and the Shipments Submitted for Review appears.

Access to the Payloads of Interest report and the Shipments Submitted for Review report is restricted to the DA and Packaging user groups.

The reports are generated based upon default values, but WDS allows the user to update the default values and to limit the report view by one or more of the selection criteria.

The WDS provides a date range criteria to limit the report to payloads completed within a specified time frame of the current date. The default time frame is two weeks.

The report is restricted to CH payloads in Complete status and not associated with a shipment that has been sent. Payloads are sorted by Payload ID in ascending order.

The report includes the following information:

- All payloads where one or more inner containers have a reported flammability index (FI) >90% of the limit (the FI limit is 50,000)
- All payloads where one or more inner containers has an AFGC < 3% of the container volume
- All payloads where one or more inner containers has a hydrogen concentration >1% of the container volume (for a 55-gallon drum, the H<sub>2</sub> concentration would exceed 1,000 ppm)
- All payloads where one or more inner containers has a Decay Heat >1 watt
- All payloads where the total payload FGE is >325 grams
- All payloads containing TDOPs where the TDOP has <9 filters
- All payloads where one or more inner containers is a drum (55-, 85-, or 100-gallon) with >1 filter
- All payloads where one or more inner containers has a zero or null value recorded for the transportation parameters or results: decay heat, decay heat error, FGE, FGE error, flammability index, hydrogen or methane concentration

The report displays the following values for each payload meeting the default selection criteria, or meeting the updated selection criteria specified by the user:

- Payload ID
- Shipping Program ID



## Appendix C - Reports

- Current Location, Destination Site ID
- Payload Type
- Each parameter value triggered by the payload or the container number for each container that qualified the payload for display on the report

The report is available in both HTML and PDF format. The HTML version of the report provides access to the Payload Data report for each payload displayed on the report and access to the Container Data report for each container displayed on the report.

### **C.12 Packaging Reports - Shipments Submitted for Review**

The Shipments Submitted for Review report provides the user with the list of shipments having "In Review" status.

The report displays the following data for each shipment in the list:

- Shipment Number
- Current Location
- Destination Site ID
- Shipping Program ID
- Status for DA approval, confirmation, shipment data finalized and date that the shipment was approved, confirmed or finalized
- Shipment handling code
- Package type(s)
- Provided send date (if available)
- Controlled shipment flag
- High-wattage shipment flag
- Packaging reviewed flag

Shipments are sorted by send date (ascending), confirmation date (ascending), and shipment data finalized (ascending), and the user has access to the shipment data (via the General Shipment report) for each shipment in the list.

Functionality is available to indicate that a shipment has been reviewed by a Packaging user.

## Appendix C - Reports

### C.13 Packaging Reports - Containers with Conditional Status List

Figure C-11. Containers with Conditional Status List Example

WDS WASTE DATA SYSTEM

Super Admin User, SUPER\_USER 3/11/2009 10:30 AM

HELP LOG OUT

DASHBOARD ACTION CENTER

Container SEARCH

CONTAINERS WITH CONDITIONAL STATUS LIST

Start Date 2/25/2009 End Date 3/11/2009 VIEW LIST

Containers with Conditional Status List

0 Containers Matched Your Query

Container Number	Certification Date	Current Location	Destination Site	Certification Program	TRUCON Code	Shipping Category	Evaluations
------------------	--------------------	------------------	------------------	-----------------------	-------------	-------------------	-------------

DASHBOARD ACTION CENTER USER PREFERENCES

INSTANCE: wdstest  
BUILD: WDS\_20090310

Access to the Containers with Conditional Status List is restricted to users in the Packaging and Shipper/Generator user groups. To generate the list, the user enters a start date and an end date using the calendar. When the View List button is selected, the ETS presents the list of containers in certification approval status where the overall CHTES container evaluation status is COND. The user may limit the list by certification date range, where the default value is containers with a certification date within two weeks of the current system date.

The container numbers are sorted by certification date in ascending order and the following data for each container in the list is displayed:

- Container Number
- Current Location, Destination Site ID, Certification Program ID
- CHTES sub-evaluation for which the conditional was returned
- TRUCON Code and shipping category

The ETS provides drill-down access to the Container Data report for each container in the list.

## Appendix C - Reports

### C.14 Regulatory Reports - Biennial Report

**Figure C-12. Biennial Report Example**

The screenshot shows the WDS (Waste Data System) interface. At the top left is the WDS logo. To its right is a disclaimer: "This is a development application. The associated values are used for demonstration purposes only." Further right is the user name "STRUM, MIKE", the date "11/18/2009 13:35", and a "LOG OUT" button. Below the header are two tabs: "DASHBOARD" and "AD-HOC QUERY". To the right of the tabs is a search bar with a "Container" dropdown and a "SEARCH" button. The main content area is titled "BIENNIAL REPORT". Below this title is a form with the following fields: "Site ID" (dropdown menu set to "All"), "Start Date" (calendar icon, date "01/01/1999"), "End Date" (calendar icon, date "11/18/2009"), "Panel" (dropdown menu set to "All"), and "Room" (dropdown menu set to "All"). To the right of these fields is a "GENERATE REPORT..." button. At the bottom of the interface is a footer bar with "DASHBOARD | USER PREFERENCES" on the left and "INSTANCE: tst04.wipp.carlsbad.nm.us" and "BUILD: WDS\_20091113" on the right.

Access to the Biennial report is restricted to the NMED user group. The user generates the report using the following user-defined report criteria.

The user selects Start Date and End Date from the calendar. The user then selects Site ID, Panel Number, and Room Number from the dropdown menus.

For each Panel Number and Room Number meeting the selection criteria, the report lists the Site IDs, in ascending order, for which waste was emplaced in the panel/room during the specified time period. For each Site ID displayed under a panel/room number heading, the report displays the Site ID, EPA ID, and the unique Waste Matrix (Matrix Summary) Codes, in ascending order, of the waste emplaced in the Panel/Room during the specified time period selection criteria. For each Site ID/Matrix Summary Category displayed on the report, the report lists the associated unique hazardous codes and the weight (kg) of the waste containers in the waste group defined by the Panel, Room, Site, Matrix Summary Category, and emplaced during the selected time period. Each individual hazardous code list is sorted in ascending order.

For each Site ID displayed under a panel/room number heading, the report displays the Site Total list of unique Hazardous Codes over the displayed Waste Matrix (Matrix Summary) Codes, and the total waste weight (kg) of the waste containers in the waste group defined by Panel, Room, and Site, and emplaced during the specified time period.

## Appendix C - Reports

### C.15 Regulatory Reports - Summary of Waste Emplacement Inventory Report

Figure C-13. Summary of Waste Emplacement Inventory Report Example

The screenshot displays the WDS (Waste Data System) interface. At the top left is the WDS logo. At the top right, it shows the user 'Super Admin User, SUPER\_USER', the date '3/11/2009 10:39 AM', and buttons for 'HELP' and 'LOG OUT'. Below the header is a navigation bar with 'DASHBOARD' and 'ACTION CENTER' tabs. A search bar with a 'Container' dropdown and a 'SEARCH' button is on the right. The main content area is titled 'SUMMARY OF WASTE EMPLACEMENT INVENTORY REPORT'. It features a 'Report Period Ending Date' field set to '3/11/2009', a 'Generate Report...' button, and radio buttons for 'PDF' and 'CSV'. At the bottom, there is a footer with navigation links 'DASHBOARD | ACTION CENTER | USER PREFERENCES' and a box showing 'INSTANCE: wdstest' and 'BUILD: WDS\_20090311'.

Access to the Summary of Waste Emplacement Inventory report is restricted to the EPA user group. EPA users may generate the report with the following selection criteria: Panel Number, Room Number, or Report Period Ending Date. The report contains a TRU Waste Inventory section that displays the total repository emplaced container volume for CH waste (m<sup>3</sup>) and RH waste (m<sup>3</sup>) emplaced on or before the specified report period ending date.

The report contains an Emplaced Container Counts section, which lists the total number of each unique container type emplaced on or before the specified report period ending date. The report displays the container type code description and the total number emplaced.

The report contains a Material Parameter Inventory section, which lists the total weight (kg) of the following waste material parameter groups:

- Non-Fe Metals
- CPR
- Fe Metals
- Other

The calculation includes the material parameter data for all containers emplaced on or before the specified report period ending date.

The report contains an EPA-Tracked Radiological Activity Inventory section, which displays the total repository activity (Ci) for each EPA-tracked radionuclide. The calculation includes the radionuclide data for all containers emplaced on or before the specified report period ending date. The EPA-tracked radionuclides are Am-241, Cs-137, Pu-238, Pu-239, Pu-240, Pu-242, Sr-90, U-233, U-234, U-238.

## Appendix C - Reports

For each panel and room in which waste was emplaced on or before the specified report period ending date, the WDS displays the following calculated values for the MgO-Related Information section:

- Total Weight of MgO (kg)
- Total Waste Weight (kg)
- Total CPR Weight (kg)
- MgO Safety Factor

The report sorts the panel/room MgO-related Information in ascending order by panel, and descending order by room. The user can export the report to a spreadsheet in a CSV format.

### C.16 Regulatory Reports - Waste Container Data Report

**Figure C-14. Waste Container Data Report Example**

The screenshot shows the WDS interface. At the top left is the WDS logo. At the top right, it says "Super Admin User, SUPER\_USER" with "HELP" and "LOG OUT" buttons. Below this is a navigation bar with "DASHBOARD" and "ACTION CENTER" tabs. A search bar contains "Container" and a "SEARCH" button. The main section is titled "WASTE CONTAINER DATA REPORT". Below this is a search bar for "Waste Stream" with "BLCHDN.001" selected and a "SEARCH" button. The results show "Containers Submitted For Characterization" and "8 Containers For Waste Stream: BLCHDN.001". A table lists the container numbers: LL85101434TRU, LL85301418TRU, LL85401535TRU, LL85501511TRU, LL85501554TRU, LL85701416TRU, LL85701510TRU, and LL85701534TRU. At the bottom, there are links for "DASHBOARD", "ACTION CENTER", and "USER PREFERENCES". A footer box shows "INSTANCE: wdstest" and "BUILD: WDS\_20090311".

Users in the NMED role may generate a Waste Container Data report by selecting a valid waste stream profile code using the dropdown menu on the form. When the Search button is selected, a list of containers is displayed for use in characterizing the specified waste stream. The user may select one or more of the displayed containers to generate the report.

## Appendix C - Reports

The report displays the following data for a selected container:

- Container ID
- Generator EPA ID
- Generator Address
- Generator Name
- Generator Contact
- IDC Code
- Waste Matrix Code
- Waste Matrix Code Group
- Container Type
- Container Weight
- Contact Dose Rate
- Certification Date
- Closure Date
- Handling Code
- NDE Complete
- Visual Exam Container
- Layers of Packaging
- Liner Exists
- Liner Hole Size
- Filter Model, Number of Filters Installed
- Hazardous Codes reported for the container
- HWFP-related gas and solid sampling data for the selected container including Sample Method, Sample Date, Analytes, Analyte Concentration (ppm) and Analysis Date

## Appendix C - Reports

- Reported waste material parameters associated with the container waste stream profile code

If the container has been shipped, the report displays the Hazardous Waste Manifest Number, Transporter EPA ID, and Transporter Name for the selected container. The report also displays the following transportation-related data, if available, for the container: Package Number, Assembly Number, ICV Closure Date, Send Date, and Receipt Date.

### C.17 Regulatory Reports - Container Waste Type Summary Report

**Figure C-15. NMED Container Waste Type Summary Report Example**

The screenshot shows the WDS (Waste Data System) interface. At the top left is the WDS logo. At the top right, it says 'STRUM, MIKE' and 'LOG OUT', with a timestamp '9/21/2009 10:29'. Below the logo are two tabs: 'DASHBOARD' and 'AD-HOC QUERY'. A search bar with a magnifying glass icon and the word 'SEARCH' is on the right. Below the search bar is a dropdown menu labeled 'Container'. The main section is titled 'CONTAINER WASTE TYPE SUMMARY REPORT'. It contains several input fields: 'Certification Program ID' (set to 'All'), 'Container Status' (set to 'All'), 'Container Type Code' (set to 'All'), 'Waste Type Code' (set to 'All'), 'Gross Weight + Error (kg)' (set to '<'), and 'Overpack Data Option' (set to 'Use Inner Container Data'). A 'GENERATE REPORT...' button is on the right. At the bottom, there is a footer with 'DASHBOARD | USER PREFERENCES' and a black box containing 'INSTANCE: tst03.wipp.carlsbad.nm.us' and 'BUILD: WDS\_20090921'.

Access to the Container Waste Type Summary report is restricted to the NMED user group. The report only includes containers in approved characterization and approved certification statuses.

The user can generate the report using the following user-defined report criteria:

- Certification Program ID
- Container Status
- Container Type Code
- Waste Type Code
- Gross Weight + Error (kg)

Selections based on active reference table records are available for the following report criteria:

- Certification Program ID
- Container Status
- Container Type Code

## Appendix C - Reports

Selection values of TRU and MTRU are available for the Waste Type Code report criteria and the user can create reports based on gross weight + error (kg) less than, equal to, or greater than user-specified values.

- The following options for the display of overpack container data:  
Overpack Container data only (no inner container data returned)
- Inner Container data only (no overpack records returned)

The report is generated in CSV format and displays the total number of containers that meet the user-specified report criteria grouped by Certification Program ID, Container Status, Container Type Code, and Waste Type.

### C.18 Regulatory Reports - NMED Container Query

**Figure C-16. NMED Container Query Form Example**

WDS WASTE DATA SYSTEM

STRUM, MIKE LOG OUT

9/21/2009 10:34

DASHBOARD AD-HOC QUERY

Container SEARCH

CONTAINER QUERY

Overpack Data Display: Inner Container Data only CLEAR ALL SEARCH EXPORT RESULTS

Container Number Container Type All

Current Location All Container Status All

Generator Site ID All Waste Stream Profile All

Cert Program ID All Waste Matrix Code All

Handling Code All Waste Type All

Charz Method ID All

Charz Method Date on

Gross Weight + Err (kg) < TRU Alpha Activity Concentration (Ci/g) <

Shipment Number Shipment Send Date on

Shipment Receipt Date on

**Date Criteria**

Vent Date on

Closure Date on

Certification Date on

**Emplacement Criteria**

Disposal Date on

Panel Room

Emplaced? All

SHIPMENT QUERY

DASHBOARD | USER PREFERENCES

INSTANCE: tst03.wipp.carlsbad.nm.us  
BUILD: WDS\_20090921



## Appendix C - Reports

Access to the NMED Container Query form is limited to users with the NMED role. The user has the ability to query directly on one or more of the container based data parameters listed in this subsection, with the following limitations:

- The query excludes inter-site shipments,
- The query is limited to containers in approved characterization or approved certification status.

The following query options apply for the display of overpack container data:

- Overpack Container data only (no inner container data returned)
- Inner Container data only (no overpack records returned)

The software excludes overpack containers from the query regardless of the overpack option selected if the query parameters include characterization method ID or characterization method date.

The software displays the set of containers meeting the query parameters in a list, where the following data points are displayed for each record:

- Container Number
- Certification Program ID
- Current Location
- Generator Site ID
- Container Type
- Container Status
- Handling Code
- Waste Stream Profile Code
- Waste Type (MTRU, TRU)
- Waste Matrix Code
- Overpack Container Number
- Shipment Number
- Shipment Send Date
- Disposal Date
- Emplacement Location (Panel, Room, Row, Column, Height, Borehole)

The software contains a mechanism to export the summary of query results to a CSV file. The following additional data points are included when the CSV file export is initiated:

- Container Volume (m<sup>3</sup>)
- Gross Weight + Error (kg)
- TRU Alpha Activity Concentration (Ci/g)
- TRU Alpha Activity (Ci)

## Appendix C - Reports

- Waste BIR ID
- Waste MWIR ID
- IDC Code
- Characterization Method ID and Characterization Date for each NDE method associated with the container
- Closure Date
- Vent Date
- Container Certification Date
- Shipment Receipt Date

The user has access to the following:

- The applicable container data report (Container, Overpack, Canister) for the container numbers listed in the result set
- The applicable overpack data report (Overpack, Canister) for the overpack container numbers listed in the result set
- Shipment Data report for the shipment numbers in the result set

The total number of containers meeting the query parameters is displayed, and the user can query on the following general data points, with selections provided based on active reference table records:

- Certification Program ID
- Current Location
- Generator Site ID
- Container Status

The user can query on the container number, with use of a specific container number string or a query string involving the wildcard (%). The user can also query by container type, with selections provided based on active reference table records.

The user can query on the following certification data points, with selections provided based on active reference table records:

- Waste Stream Profile
- Waste Matrix Code
- Waste Type (MTRU/TRU)
- Characterization Method ID

## Appendix C - Reports

The user has the ability to query by closure date, vent date, and certification date, using a specific date or date range; by characterization method date, using a specific date or date range; by gross weight + error (kg) less than, equal to, or greater than user-specified values; by TRU alpha activity concentration (Ci/g) less than, equal to, or greater than user-specified values; by disposal date, using a specific date or date range; by a combination of the location parameters: panel and room; by handling code (CH/RH) and emplaced status (Y/N - based on disposal date recorded); on the shipment number, using a specific shipment number string or a query string involving the wildcard (%); and by shipment send date and receipt date, using a specific date or date range.

### C.19 Regulatory Reports - NMED Shipment Query

**Figure C-17. NMED Shipment Query Form Example**

The screenshot shows the 'AD-HOC QUERY' section of the WDS interface. It features a 'CONTAINER QUERY' and 'SHIPMENT QUERY' tab. The 'SHIPMENT QUERY' tab is active, displaying a search form with various filters. At the top right, the user is identified as 'STRUM, MIKE' with a 'LOG OUT' button and the timestamp '9/21/2009 10:34'. The search form includes a 'Container' dropdown menu and a 'SEARCH' button. Below the search form, there are several input fields and dropdown menus for filtering results: 'Shipment Number', 'Shipping Program ID' (set to 'All'), 'Contains Payloads of Container Type' (set to 'All'), 'Handling Code' (set to 'All'), 'Shipment Status' (set to 'All'), 'Package Type' (set to 'All'), 'Waste Stream Profile' (set to 'All'), 'Tractor Number' (set to 'All'), and 'Trailer Number' (set to 'All'). There are also date range selectors for 'Sent Date Between', 'Received Date Between', and 'Assembly Emplaced Date Between'. At the bottom, there are links for 'DASHBOARD' and 'USER PREFERENCES', and a footer area showing the instance 'tst03.wipp.carlsbad.nm.us' and build 'WDS\_20090921'.

Access to the NMED Shipment Query form is limited to users with the NMED role. The user has the ability to query directly on one or more of the shipment-based data parameters listed in this subsection, with the following exceptions:

- The query excludes inter-site shipments.
- The query is limited to shipments in Completed, En Route, or Received status.

Sets of shipments meeting the query parameters in a list can be displayed, with the following data points displayed for each record: Shipment Number, Shipping Program ID, Shipment Status, Handling Code, Transporter Name, Tractor Number, Trailer Number, Send Date, Receipt Date, and Latest Assembly Emplaced Date. The summary of query results is exported to a CSV file.

## Appendix C - Reports

The following additional data points are displayed when the CSV file export is initiated: Packaging Numbers, Packaging Types, Payload Container Types, Waste Stream Profiles.

Access to the Shipment Data report is provided for the shipment numbers in the results set. The total number of shipments meeting the query parameters is displayed.

The users can query for Shipment Number, using a specific shipment number or a query string involving the wildcard (%).

The user can query for the following general data points, with selections provided based on active reference table records: Shipping Program ID, handling code, shipment status, waste stream profile, tractor number, trailer number.

The user can query for shipments that contain payloads of a specified payload container type, with container type selections provided based on active reference table records.

The user can query for shipments that contain payloads assigned to a specified package type, with package type selections provided based on active reference table records.

The user can query for shipments that contain payloads assigned to a specified package type, with package type selections provided based on active reference table records.

The user can query for shipments where the sent date, received date, and/or assembly emplaced date is within a specified date range.

## C-20 Regulatory Reports - Container Waste Type Summary Report

**Figure C-18. Container Waste Type Summary Report Form Example**

The screenshot shows the WDS (Waste Data System) interface. At the top left is the WDS logo. At the top right, the user is logged in as 'STRUM, MIKE' with a 'LOG OUT' button and the timestamp '9/21/2009 10:43'. Below the header, there are two tabs: 'DASHBOARD' and 'AD-HOC QUERY'. To the right of these tabs is a search bar with a 'Container' dropdown menu and a 'SEARCH' button. The main section is titled 'CONTAINER WASTE TYPE SUMMARY REPORT'. It contains several input fields: 'Certification Program ID' (dropdown menu), 'Container Status' (dropdown menu), 'Container Type Code' (dropdown menu), 'Waste Type Code' (dropdown menu), 'Gross Weight + Error (kg)' (text input with a dropdown for units), and 'Overpack Data Option' (dropdown menu). A 'GENERATE REPORT...' button is located at the bottom right of the form. At the bottom of the page, there is a footer with 'DASHBOARD | USER PREFERENCES' on the left and 'INSTANCE: tst03.wipp.carlsbad.nm.us BUILD: WDS\_20090921' on the right.

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Access to the Container Waste Type Summary report form is restricted to the NMED user group.

The user can generate the report using the following user-defined report criteria: Certification Program ID, Container Status, Container Type Code, Waste Type Code, Gross Weight + Error (kg).

Selections are available based on active reference table records for the following report criteria: Certification Program ID, Container Status, Container Type Code and selection values of TRU and MTRU for the Waste Type Code report criteria are also available.

The user can report on gross weight + error (kg) less than, equal to, or greater than user-specified values and the following options for the display of overpack container data:

- Overpack Container data only (no inner container data returned)
- Inner Container data only (no overpack records returned)

The report only includes containers in approved characterization and approved certification statuses and displays the total number of containers that meet the user-specified report criteria grouped by Certification Program ID, Container Status, Container Type Code, and Waste Type. The report can be generated in CSV format.

### **C.21 Shipment - PATCD Report**

PATCD report generation is restricted to payloads in Complete status. The PATCD report generated is associated with the selected payload when a payload ID is specified. The PATCD is generated for each payload associated with the selected shipment when a shipment number is specified. The format of the PATCD report for a payload is specified in Table 6.2-4 of the CH-TRAMPAC. The PATCD report is populated based on the data in the payload and associated container records, reference data, and the latest payload CHTES results.

Yes and No checkboxes for Controlled Shipment are displayed on the PATCD if the TRAMPAC results are not available for the payload. The software reports Controlled Shipments as Yes if one or more containers on the payload have a shipping period < 20 days as specified by the governing shipping period of the latest TRAMPAC payload evaluation results. The software reports the value for Controlled Shipment as No if all containers assigned to the shipment have a shipping period  $\geq 20$  days as specified by the governing shipping period of the latest TRAMPAC payload evaluation results.

"NA-Mixing" for Shipping Category, Decay Heat Limit, and Hydrogen/Flammable Gas Generation Rate Limit are displayed when all containers in the payload do not have the same shipping category or if there are dunnage containers in the payload (including overpacks).

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The Hydrogen/Flammable Gas Generation Rate Limit is left blank if the TRAMPAC payload evaluation results are not available and if all containers in the payload have the same shipping category and there are no dunnage containers in the payload.

"NA-Mixing" for Hydrogen Flammable Gas Generation Rate and Flammability Index for the container is displayed if the container is an overpack.

"NA" for Decay Heat Limit is displayed when the payload contains Waste Type IV containers and when all the payload containers have the same shipping category and when there are no dunnage containers in the payload. The Decay Heat Limit is left blank if the TRAMPAC payload evaluation results are not available or if all containers in the payload have the same shipping category, and when there are no dunnage containers in the payload (including in any overpacks) and the payload does not contain Waste Type IV containers.

The Hydrogen Flammable Gas Generation Rate and Flammability Index is left blank when the CHTES evaluation results are not available and if the container is not an overpack.

The PATCD report displays the container tare weight and tare weight error, based on the dunnage container type, for each dunnage container assigned to the payload. The report displays zeroes for all other reported individual container values for each dunnage container.

The Pu-239 FGE Limit in the Payload Certification Parameters is left blank if the payload CHTES evaluation results are not available. The software reports the assembly data in descending order by weight.

### **C.22 Shipment - PCTCD and OPCTCD Reports**

Access to the PCTCD/OPCTCD reports is restricted to the following user groups: DA, Shipper/Generator, Packaging, Waste Handling Operations, Transportation, CBFO, NRC, Quality Assurance, and WIPP user.

The user may generate the payload container-level transportation reports (PCTCD and/or OPCTCD) associated with the combination of a specified Shipping Program ID and a selected shipment, payload, or payload container.

PCTCD and OPCTCD report generation is restricted to payload containers associated with a payload in Complete status. A selection parameter is available to allow the user to produce all the PCTCDs for the overpack inner containers when an overpack container is in the query set. The user may generate the PCTCD report when a direct-load payload container is selected. An OPCTCD report will be generated when an overpack payload container is selected. In addition, the user may generate the inner container PCTCDs for the containers associated with the selected overpack, as specified in the user selection parameters. When a payload is specified, the PCTCD/OPCTCD reports are generated for each payload container associated with the

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specified payload ID. When a shipment is specified, the PCTCD/OPCTCD reports are generated for each payload container associated with the specified shipment number.

The format of the applicable form of the PCTCD report generated for a container is based on the compliance method from the latest TRAMPAC container evaluation results:

- For a container with an analytical compliance method, the report is formatted per Table 6.2-1 of the latest version of the CH-TRAMPAC.
- For a container with a measurement or testing compliance method, the report is formatted per Table 6.2-2 of the latest version of the CH-TRAMPAC.

If the TRAMPAC evaluation results are not available at the time that the report is run, the report is formatted per Table 6.2-2 (Test Category) of the latest revision of the CH-TRAMPAC. The Payload ID to which the container has been assigned is displayed at the top of the PCTCD report. The PCTCD report is populated from the container record data, the latest TRAMPAC evaluation results data, and reference table data.

---

### **NOTE**

The expected use of the manual transportation checks (containers with no TRAMPAC evaluation results) is for Waste Type IV containers. Therefore, use the Test Category format for the PCTCD when evaluation results are not available.

---

For the Headspace H2 Concentration field, if the value is unavailable from the CHTES container evaluation results, the sum of the hydrogen concentration and the methane concentration is displayed from the Sample Type with the latest date, a Headspace flag value of "Y," and a Purpose flag value other than "P" in the Sample Types reference table.

For the Time Container Vented field, if the value is unavailable from the CHTES container evaluation results, the Time Container Vented is displayed based on the container aspiration method as follows:

- Aspiration method 3 - the difference (in days) between the sample date and the container vent date
- Others - the difference (in days) between the CHTES evaluation date and the container vent date
- For the Container Closed Time field, if the value is unavailable from the CHTES container evaluation results, the difference (in months) between the container vent date and the container closure date

The "Yes" and "No" checkboxes for "Controlled Shipment" are displayed on the PCTCD if the TRAMPAC evaluation results are not available at the time the report is run for the

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payload to which the container is assigned. "Controlled Shipment" is reported as "Yes" on the PCTCD if one or more containers on the payload to which the container is assigned have a shipping period < 20 days as specified by the governing shipping period of the latest payload TRAMPAC evaluation. Controlled shipment designation is based on payload only.

"Controlled Shipment" is reported as "No" on the PCTCD if all containers on the payload to which the container is assigned have a shipping period  $\geq 20$  days as specified by the governing shipping period of the latest payload TRAMPAC evaluation results. Controlled shipment designation is based on payload only.

The appropriate container configuration description is displayed on the PCTCD as specified in the current revision of the CH-TRAMPAC based on the container type code for direct load containers and based on both the container type code and the overpack container type code for overpacked containers. For additional details, refer to CH-TRAMPAC, Section 6.2.1.1, Container Configuration, for both direct load and overpacked containers.

The software displays "NA" for the Weight Limit and FGE Limit on the PCTCD for an overpacked container. The following fields are left blank on the PCTCD when the TRAMPAC container evaluation results are not available for the container:

- Measured Parameter: Decay Heat Limit
- Unvented Waste Parameter: Required Aspiration Period

---

### **NOTE**

Decay heat data are not displayed on the Test Category form, which is used when TRAMPAC data are not available.

---

The OPCTCD report for an overpack container is formatted as specified in Table 6.2-3 of the CH-TRAMPAC. "Yes" and "No" checkboxes are displayed for "Controlled Shipment" on the OPCTCD if the TRAMPAC evaluation results are not available for the payload to which the overpack is assigned.

"Controlled Shipment" is reported as "Yes" on the OPCTCD if any container on the payload to which the overpack is assigned has a shipping period <20 days as specified by the governing shipping period of the latest TRAMPAC payload evaluation.

"Controlled Shipment" is reported as "No" on the OPCTCD if all containers on the payload to which the container is assigned have a shipping period  $\geq 20$  days as specified by the governing shipping period of the latest TRAMPAC payload evaluation.

The Payload ID to which the overpack container has been assigned is displayed at the top of the OPCTCD report. The OPCTCD report is populated based on the data in the overpack record, the container records for the overpacked containers, reference data, and the latest TRAMPAC evaluation results.



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"NA-Mixing" is displayed on the OPCTCD for Shipping Category, Decay Heat Limit, and Hydrogen/Flammable Gas Generation Rate Limit if all containers in the overpack do not have the same shipping category or if there are dunnage containers in the overpack.

The Hydrogen/Flammable Gas Generation Rate Limit field is left blank if the TRAMPAC overpack evaluation results are not available, if all the overpacked containers have the same shipping category, and if there are no dunnage containers in the overpack.

The Decay Heat Limit field is left blank if the TRAMPAC overpack evaluation results are not available, if all the overpacked containers have the same shipping category, if the overpack does not contain Waste Type IV containers, and if there are no dunnage containers in the overpack.

"NA" for Decay Heat Limit is displayed if the overpack contains Waste Type IV containers and if all the overpacked containers have the same shipping category and there are no dunnage containers in the overpack.

The following Overpacked Container Measurement Parameters are left blank on the OPCTCD when TRAMPAC payload evaluation results are not available for an overpacked container:

- Hydrogen/Flammable Gas Generation Rate
- Flammability Index

"Dunnage" is reported on the OPCTCD for each dunnage container associated with the overpack. The number of dunnage containers associated with the overpack is calculated by subtracting the number of inner containers assigned to the overpack from the maximum number of inner containers associated with the overpack type code.

The OPCTCD report displays the container tare weight and tare weight error, based on the dunnage container type, for each dunnage container associated with the overpack.

The report displays zeroes for all other Overpacked Container Measured Parameter values.

"NA" is displayed for Decay Heat Limit on the OPCTCD if the overpack contains Waste Type IV containers, if all the overpacked containers have the same shipping category, and there are no dunnage containers in the overpack.

### **C.23 Shipment - PTCD Report**

Access to the PTCD report is restricted to the following user groups: DA, Shipper/Generator, Packaging, Waste Handling Operations, Transportation, CBFO, NRC, Quality Assurance, and WIPP user.

Users may generate the PTCD associated with the combination of a specified Shipping Program ID and a selected shipment, payload, and/or canister ID.

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The format of the PTC D report for a payload is specified in Table 6.2-1 of the latest version of the RH-TRAMPAC.

The PTC D report is populated based on the data in the payload and associated container records, reference data, and the latest 72-B canister TRAMPAC evaluation results.

### C.24 Shipment - Shipment Summary Report

**Figure C-19. Shipment Summary Report Example**

The screenshot shows the WDS (Waste Data System) interface. At the top left is the WDS logo. At the top right, it says 'Super Admin User, SUPER\_USER' with a 'HELP' button and the date '3/11/2009 12:44 PM' with a 'LOG OUT' button. Below the logo are 'DASHBOARD' and 'ACTION CENTER' tabs. A search bar with a magnifying glass icon and the word 'SEARCH' is on the right. Below the search bar is a 'Container' dropdown menu. The main section is titled 'SHIPMENT SUMMARY REPORT'. It contains a 'Shipment Number' dropdown menu with 'BNSHIP1234' selected, a 'Shipper Site ID' dropdown menu with 'BN' selected, and a 'GENERATE REPORT...' button. At the bottom, there is a navigation bar with 'DASHBOARD | ACTION CENTER | USER PREFERENCES' and a box on the right showing 'INSTANCE: wdtest' and 'BUILD: WDS\_20090311'.

Access to the Shipment Summary report is restricted to the following user groups: DA, Shipper/Generator, Transportation, and Waste Handling Operations.

The user may generate the Shipment Summary report for any shipment stored in the database. The shipment number and shipper site ID are required selection criteria for generation of the report. When creating a shipment summary report, the user may input the shipment number and site ID into the fields provided on the form and select the Generate Report button to run the report.

The Shipment Summary report displays the following data for the shipment specified by the selection criteria:

- Shipment number
- Manifest number
- Shipping period
- Controlled shipment flag
- Send date
- Receipt Date
- Shipping Program ID (ID and description)
- Tractor ID
- Trailer ID
- Status
- Shipment Limited Due To flags

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- High Wattage Shipment flag
- Transporter Name
- Comments
- Set of Radionuclides present in the containers of the shipment
- Total Shipment Activity (TBq)
- Total Shipment Pu-239 Equivalent Activity (PE-Ci)
- Total Shipment Weight (kg)
- List of unique Waste Stream Profile Numbers present in the shipment

The report displays the following information for each payload in the shipment:

- Package Number
- Payload ID
- Package/ICV/IV Closure Date
- Shipping Period
- DOT Description
- Dose Rate 1m, 2m, and Contact
- Set of Radionuclides present in the containers of the payload
- Total Payload Activity (TBq)
- Total Payload Pu-239 Equivalent Activity (PE-Ci)
- Total Payload Weight (kg)

The report displays the following information for each assembly in the displayed payloads:

- Assembly ID
- For each container in the assembly:
  - Container number
  - Total dose rate (mrem/hr)
  - Hazardous codes
  - All reported radionuclides
  - Total activity (TBq)
  - Pu-239 equivalent activity (PE-Ci), weight (kg)
  - Controlled flag
  - High-wattage flag
- Set of Radionuclides present in the containers of the assembly
- Total Assembly Activity (TBq)
- Total Assembly Pu-239 Equivalent Activity (PE-Ci)
- Total Assembly Weight (kg)

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The report calculates all total activity values (container, assembly, payload, and shipment) by summing the activity values for each reported radionuclide, substituting zero for all negative activity values. The report contains the shipment number in barcode format.

### C.25 Waste Handling Operations - Closure Report

**Figure C-20. Closure Report Example**

The screenshot shows the WDS (Waste Data System) interface for generating a Closure Report. At the top left is the WDS logo. At the top right, it displays 'Super Admin User, SUPER\_USER', the date '3/11/2009 12:50 PM', and buttons for 'HELP' and 'LOG OUT'. Below the header are tabs for 'DASHBOARD' and 'ACTION CENTER'. A search bar with a 'Container' dropdown and a 'SEARCH' button is present. The main section is titled 'CLOSURE REPORT' in red. Below this is a form with 'Panel' and 'Room' dropdown menus, both set to 'Select a Panel', and a 'GENERATE REPORT' button. At the bottom, there are links for 'DASHBOARD', 'ACTION CENTER', and 'USER PREFERENCES', and a box showing 'INSTANCE: wdstest' and 'BUILD: WDS\_20090311'.

Access to the Closure report is restricted to the Waste Handling Operations and CBFO user groups. The user generates the Closure report with the Panel and Room dropdown menus as selection criteria. The report is available only for closed rooms in the WIPP underground. The report displays the values defined for the Daily report, except that the Final MgO safety factor ratio for the closed room is displayed.

### C.26 Waste Handling Operations - Daily Emplacement Volume Report

**Figure C-21. Daily Emplacement Volume Report Example**

The screenshot shows the WDS interface for generating a Daily Emplacement Volume Report. The layout is similar to Figure C-20, but the main section is titled 'DAILY EMPLACEMENT VOLUME REPORT' in red. The form includes 'Panel' and 'Room' dropdown menus, both set to 'Select a Panel'. It also has 'Start Date' and 'End Date' fields, both set to '3/11/2009', and a 'Display by handling' checkbox. A 'GENERATE REPORT' button is present. The bottom navigation and instance information are the same as in Figure C-20.

Access to the Waste Volume report is restricted to the Waste Handling Operations user group. The user generates the Waste Volume report by selecting the panel and room from the dropdown menus and entering a start date and end date in the date fields on the form. The user then selects the Generate Report button to run the report. If the

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Display by Handling checkbox is checked, the volume of waste in cubic meters by handling code (CH and RH) emplaced by day will be shown on the report. The report uses container volume for CH volumes and waste volume for RH volumes. For each panel/room combination meeting the selection criteria, the software displays the total volume of waste emplaced by day (m<sup>3</sup>), for each day in the time span dictated by the entered start and end date. This report may be exported to a spreadsheet in CSV format.

### C.27 Waste Handling Operations - Daily Report

**Figure C-22. Daily Report Example**

The screenshot displays the WDS (Waste Data System) interface for generating a Daily Report. At the top, the WDS logo is on the left, and user information (Super Admin User, SUPER\_USER) and a date/time stamp (3/11/2009 12:59 PM) are on the right. There are buttons for HELP and LOG OUT. Below this is a navigation bar with DASHBOARD and ACTION CENTER tabs. A search bar is present with a dropdown menu set to 'Container' and a SEARCH button. The main section is titled 'DAILY REPORT' and contains a form with 'Panel' and 'Room' dropdown menus, both set to 'Select a Panel', and a GENERATE REPORT button. At the bottom, there is a footer with links for DASHBOARD, ACTION CENTER, and USER PREFERENCES, and a box showing INSTANCE: wdstest and BUILD: WDS\_20090311.

Access to the Daily report is restricted to the Waste Handling Operations and CBFO user groups. The user generates the Daily report with the Panel and Room dropdown menus as selection criteria. The report is available for active rooms in the WIPP underground, and all data are segmented on a per room basis. Weights are displayed in kg, and volumes are displayed in m<sup>3</sup>. The report uses container volume for CH volumes and waste volume for RH volumes. The report displays the following data points:

- Excess/Deficit of MgO with respect to currently emplaced waste containers
- Total combined weight of MgO
- Total number of required MgO sacks for shipments with the status of En Route and Complete
- List of CH waste container types and total number of CH waste containers
- Total weight and volume and percent of non-supercompacted waste
- Total weight and volume of CH waste and RH waste
- Total Cellulose, Plastic, and Rubber from CH and RH waste material

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- Total Cellulose, Plastic, and Rubber from CH and RH packaging material
- Overall CH waste material and CH packaging material CPR Total
- Panel/Room designation and Room status
- Percentage of panel CH and RH volume limit currently occupied
- List of RH waste container types and Total number of RH waste containers
- Total Combined CPR from RH waste material and RH packaging material
- Overall RH waste material and RH packaging material CPR Total
- Total Combined Cellulose from CH and RH waste and packaging material
- Total Combined Plastic from CH and RH waste and packaging material
- Total Combined Rubber from CH and RH waste and packaging material
- Percent of panel RH canister quantity limit currently occupied

### C.28 Waste Handling Operations - Emplacement by Container Type Report

**Figure C-23. Emplacement by Container Type Report Example**

The screenshot shows the WDS (Waste Data System) interface. At the top left is the WDS logo. At the top right, it says "Super Admin User, SUPER\_USER" with a date "3/11/2009 13:01 PM" and buttons for "HELP" and "LOG OUT". Below this is a navigation bar with "DASHBOARD" and "ACTION CENTER" tabs. A search bar with a magnifying glass icon and a "SEARCH" button is on the right. The main content area is titled "EMPLACEMENT BY CONTAINER TYPE REPORT". Below the title is a form with "Panel" and "Room" dropdown menus, both set to "Select a Panel". There is a "Separate by Site" checkbox and a "GENERATE REPORT" button. At the bottom, there is a footer with "DASHBOARD | ACTION CENTER | USER PREFERENCES" and a box containing "INSTANCE: wdtest" and "BUILD: WDS\_20090311".

Access to the Emplacement by Container Type report is restricted to the Waste Handling Operations and Packaging user groups.

The user generates the Emplacement by Container report with the Panel and Room dropdown menus as selection criteria. When the user checks the Separate by Site checkbox on the form, data in this report are segmented by site. For the selected panel/room combination, the report displays the total number of waste containers emplaced by payload container type and the total number of dunnage containers emplaced by payload container type. The report automatically displays data for CH and

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RH payload container types. The report can be exported to a spreadsheet in CSV format.

### C.29 Waste Handling Operations - Emplacement History Overview Report

**Figure C-24. Emplacement History Overview Report Example**

The screenshot shows the WDS (Waste Data System) interface. At the top left is the WDS logo. At the top right, it says "Super Admin User, SUPER\_USER" with a timestamp "3/11/2009 13:02 PM" and buttons for "HELP" and "LOG OUT". Below the logo are tabs for "DASHBOARD" and "ACTION CENTER". The main heading is "EMPLACEMENT HISTORY OVERVIEW REPORT". There is a search bar with a "Container" dropdown and a "SEARCH" button. Below this is a "Panel" dropdown menu with "Select a Panel" and a "GENERATE REPORT" button. At the bottom, there is a navigation bar with "DASHBOARD | ACTION CENTER | USER PREFERENCES" and a box showing "INSTANCE: wdstest" and "BUILD: WDS\_20090311".

Access to the Emplacement History Overview is restricted to the Waste Handling Operations and CBFO user groups.

To generate the report, the user selects a panel from the dropdown menu on the form. After the panel is selected, the user selects the Generate Report button to generate the report. The Emplacement History Overview for the selected panel is then displayed in tabular form, separated by CH and RH. The report uses container volume for CH volumes and waste volume for RH volumes.

For each selected panel, the CH overview displays the following data for each room within the panel:

- Room Emplacement start date
- Room Emplacement end date
- Number of Rows used for waste emplacement
- Emplaced volume (m<sup>3</sup>)
- MgO Safety Factor

For each selected panel, the CH overview displays panel totals for the following data points:

- Emplaced volume
- MgO Safety Factor (Calculated over the total panel)
- Total Number of Dunnage Containers
- Total for each container type

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The CH overview displays overall totals/averages for all selected panels for the following data points:

- Average number of rows by room
- Average Emplaced Volume by room
- MgO Safety Factor (Calculated over the selected panels)
- Total Number of Dunnage

For each selected panel, the RH overview displays the following data for each room within the panel:

- Room Emplacement start date
- Room Emplacement end date
- Emplaced volume
- Number of Canisters

For each selected panel, the RH overview displays panel totals for the data points Total Number of Canisters.

### C.30 Waste Handling Operations - MgO Excess Factor Report

**Figure C-25. MgO Excess Factor Report Example**

The screenshot shows the WDS (Waste Data System) interface. At the top left is the WDS logo. At the top right, it says "Super Admin User, SUPER\_USER" with a timestamp "3/11/2009 13:03 PM" and buttons for "HELP" and "LOG OUT". Below this is a navigation bar with "DASHBOARD" and "ACTION CENTER" tabs. A search bar with a "SEARCH" button is on the right. The main section is titled "MGO EXCESS FACTOR REPORT". It contains a form with the following fields: "Panel" (dropdown menu), "Room" (dropdown menu), "Start Date" (text field with "3/11/2009"), "End Date" (text field with "3/11/2009"), and a "GENERATE REPORT" button. At the bottom left, there are links for "DASHBOARD", "ACTION CENTER", and "USER PREFERENCES". At the bottom right, a box displays "INSTANCE: wdstest" and "BUILD: WDS\_20090311".

Access to the MgO Excess Factor report is restricted to the Waste Handling Operations and CBFO user groups.

The user generates the MgO Excess Factor report by selecting the panel and room from the dropdown menus and entering a start date and end date in the date fields provided on the form. After the user selects the desired panel and room and inputs the desired date range, the user selects the Generate Report button to run the report.

For each Panel/Room combination specified in the selection criteria, the software displays the calculated MgO Safety Factor ratio on each date in the specified date range for the specified panel/room. The calculated MgO Sack Balance on each date in

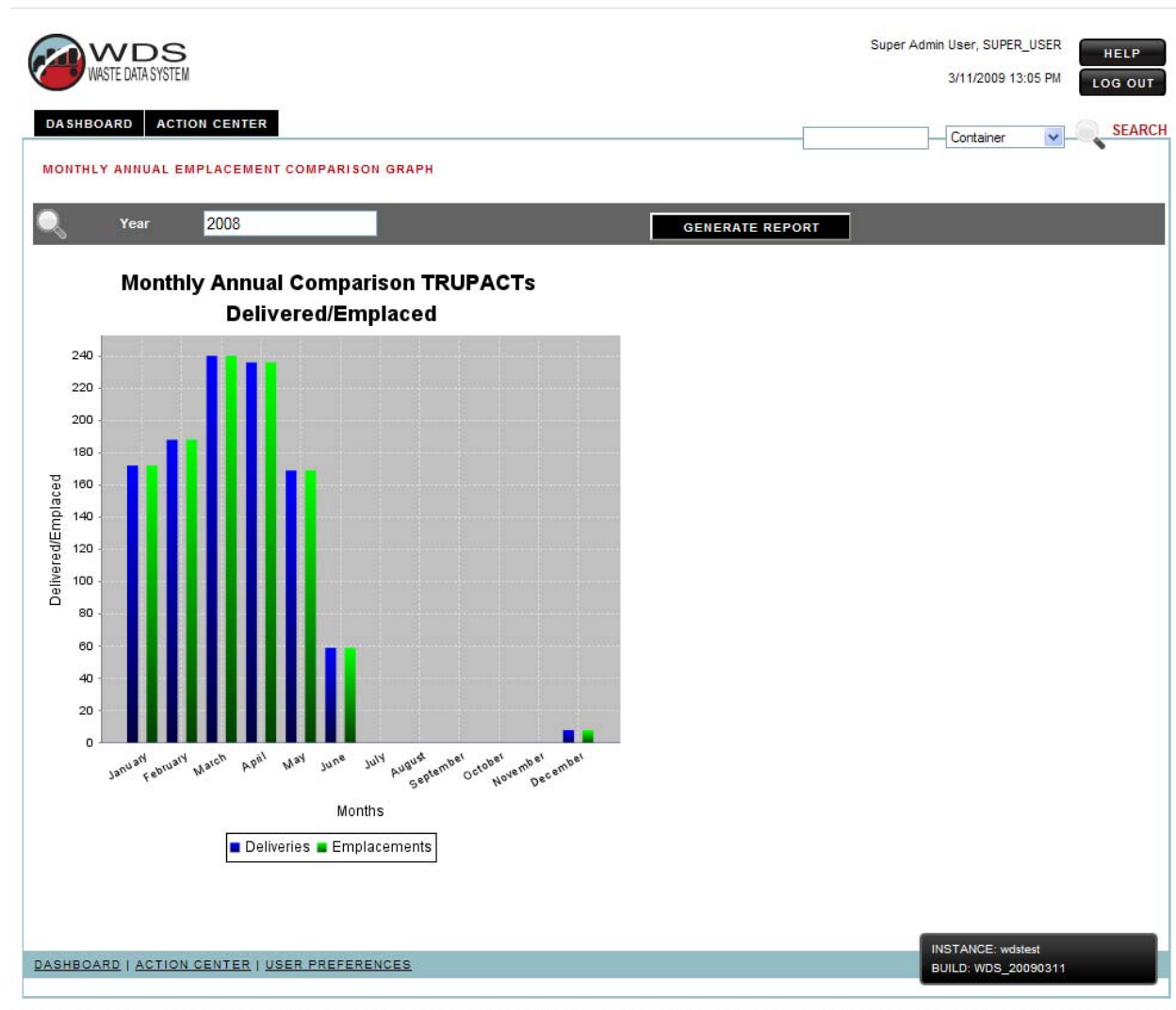


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the specified date range for the specified panel/room is also shown on the report. The user may export the report to a spreadsheet in CSV format.

### C.31 Waste Handling Operations - Monthly Annual Emplacement Comparison Graph

Figure C-26. Monthly Annual Emplacement Comparison Graph Example



Access to the Monthly Annual Comparison Emplacement Graph function is restricted to the Waste Handling Operations user group. The Monthly Annual Comparison Emplacement Graph is plotted based the selected year(s).

The horizontal axis of the graph is delimited by month. The left vertical axis of the graph represents Number of Packages Emplaced (CH and RH), delimited by values of 50 (from 0 to 400). For each selected year, the software plots a bar representing the number of packages emplaced for each month in the year.

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The software provides a mechanism to allow the waste operations user access to detailed data for a given year/month bar, where the number of packages emplaced is broken down by week using a script developed to generate a report outside the database. For each week shown for the detailed data, the software provides a mechanism to access detailed shipment data for the week, including emplacement date, shipment number, and package number for each package emplaced during the weekly timeframe. The software provides a mechanism to access detailed data for a given year/month bar, where the number of packages received is broken down by week.

For each week shown for the detailed data, the user can access detailed shipment data for the week, including receipt date, shipment number, and package numbers for each shipment received during the weekly timeframe using a script developed to generate a report outside the database.

### C.32 Waste Handling Operations - Nuclide Report

**Figure C-27. Nuclide Report Example**

The screenshot shows the WDS (Waste Data System) interface. At the top left is the WDS logo. At the top right, it says 'Super Admin User, SUPER\_USER' with 'HELP' and 'LOG OUT' buttons, and the date '3/11/2009 13:08 PM'. Below the logo are 'DASHBOARD' and 'ACTION CENTER' tabs. A search bar with a 'Container' dropdown and a 'SEARCH' button is on the right. The main section is titled 'NUCLIDE REPORT'. It contains a form with the following fields: 'Certification Program ID' (dropdown: All), 'Nuclide' (dropdown: All), 'Handling Code' (dropdown), 'Show Uncertainty' (checkbox: N), 'TRU Nuclides Only' (checkbox: Y), 'EPA Tracked Nuclides Only' (checkbox: Y), 'Panel' (dropdown: All), 'Room' (dropdown: All), 'Start Date' (text: 01/01/1999), and 'End Date' (text: 3/11/2009). A 'GENERATE REPORT...' button is at the bottom right of the form. At the bottom of the page, there is a footer with 'DASHBOARD | ACTION CENTER | USER PREFERENCES' and a box containing 'INSTANCE: wdstest' and 'BUILD: WDS\_20090311'.

Access to the Nuclide report is restricted to the following user groups: DA, Safety and Emergency Response, CBFO, EPA, and WIPP user.

The user generates the Nuclide report with the selection criteria on the form. The user selects the desired Certification Program ID, Nuclide, Start Date, End Date, Panel Number, Room Number, Handling Code, and Show Uncertainty (default value is false) from the dropdown menus provided. The user then selects the Generate Report button to run the report.

For each Panel/Room combination meeting the selection criteria, the report displays the radionuclides that meet the selection criteria present in one or more containers that meet the selection criteria. The report groups the radionuclides by room, ordering the

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panel/room groups in ascending order by panel (primary sort) and in descending order by room (secondary sort).

The report provides the following data:

- Radionuclides in the selection set for a panel/room combination in ascending order by radionuclide name
- Total activity (Ci) and total mass (g) for all displayed radionuclides by panel/room

---

### NOTE

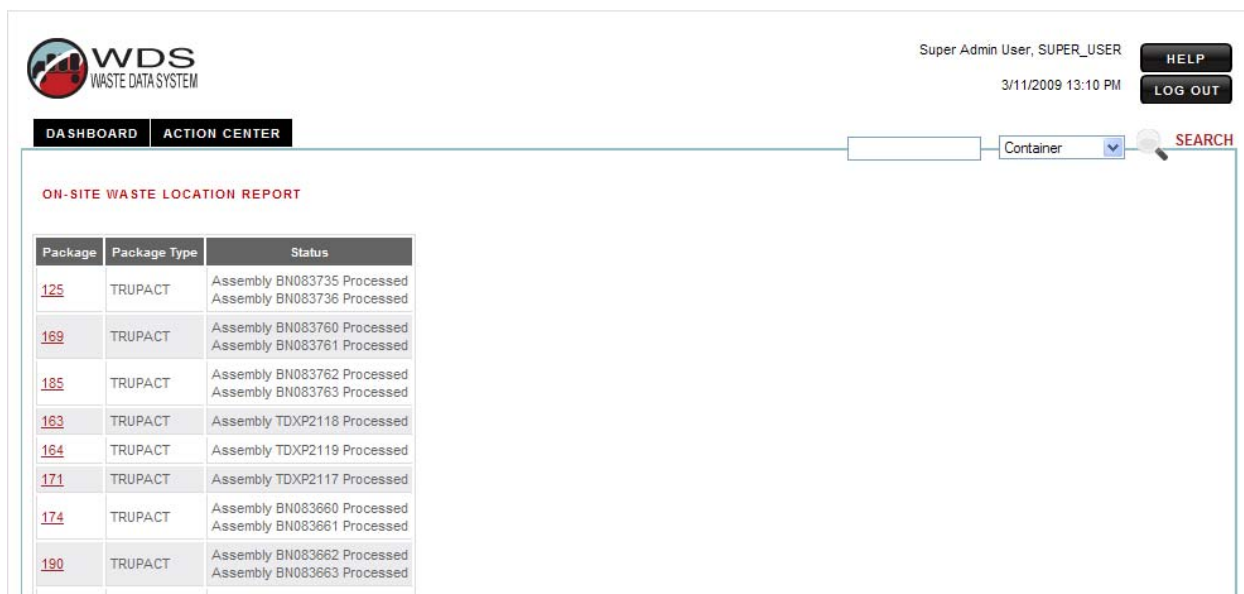
Zero is substituted for all reported negative activity (-1) and negative mass values (-1).

---

- Grand totals for activity (Ci) and mass (g) for all panel/room combinations included in the selection criteria

## C.33 Waste Handling Operations - On-Site Waste Location Report

**Figure C-28. On-Site Waste Location Report**



Package	Package Type	Status
<a href="#">125</a>	TRUPACT	Assembly BN083735 Processed Assembly BN083736 Processed
<a href="#">169</a>	TRUPACT	Assembly BN083760 Processed Assembly BN083761 Processed
<a href="#">185</a>	TRUPACT	Assembly BN083762 Processed Assembly BN083763 Processed
<a href="#">163</a>	TRUPACT	Assembly TDXP2118 Processed
<a href="#">164</a>	TRUPACT	Assembly TDXP2119 Processed
<a href="#">171</a>	TRUPACT	Assembly TDXP2117 Processed
<a href="#">174</a>	TRUPACT	Assembly BN083660 Processed Assembly BN083661 Processed
<a href="#">190</a>	TRUPACT	Assembly BN083662 Processed Assembly BN083663 Processed

Access to the report is restricted to the Safety & Emergency Response, Transportation, and Waste Operations user groups. When the user clicks on the link to the report, the location and status of received packages is shown. The user may click on the Package number link to obtain related data in the package summary, assembly summary, and container summary reports from the Assembly link until emplaced in the underground.

## Appendix C - Reports

The report displays the locations of all TRU waste packages in "received" or "in process" status and not emplaced. The type of each displayed TRU waste package (e.g., TRUPACT, HALFPACT, RH72-B) is shown on the report. The software provides a drill down function to the next lower packaging type until the lowest level of confinement is reached. The software summarizes and displays the hazardous constituents, radioisotopes and Be (where greater than 1%) for a selected package.

### C.34 Transportation Reports – PCB and Controlled Shipments Report

Access to the PCB and Controlled Shipments Report is restricted to the Transportation users. The report is generated using the following user-defined report criteria: Shipping Site, Shipment Status. Selection values are provided based on active reference table records for the Shipment Status and Shipping Site report criteria. The report displays the following data for shipments meeting the user-specified report criteria that contain controlled payloads and/or PCB containers and have not been received and processed: Shipping Site, Shipment Number, Package/Cask ID, Shipment Status, ICV Closure Date/Time, Shipping Period, Venting Due Date/Time, Time Remaining, High Wattage flag, PCB flag, HRCQ flag. The report shall sort the displayed data by Shipping Site, Shipment Number, Package/Cask ID. The user has the option to generate the output in PDF or CSV format.

**Figure C-29. PCB and Controlled Shipments Report**

The screenshot displays the WDS (Waste Data System) web interface. At the top left is the WDS logo. In the top right corner, there is a 'LOG OUT' button and a timestamp '7/7/2010 10:03'. Below the logo, there are three tabs: 'DASHBOARD', 'AD-HOC QUERY', and 'SCRIPT INTERFACE'. A 'Container' dropdown menu is located to the right of these tabs. Below the tabs, the title 'PCB AND CONTROLLED SHIPMENTS REPORT' is displayed. The main form area contains two dropdown menus: 'Shipping Site' (set to 'All') and 'Shipment Status' (set to 'All'). A 'SEARCH' button is positioned to the right of the 'Shipment Status' dropdown. Below the dropdowns, there are radio buttons for 'PDF' and 'CSV' output formats, and a 'GENERATE REPORT...' button. At the bottom of the interface, there is a footer with 'DASHBOARD | USER PREFERENCES' and system information: 'INSTANCE: prd01.wipp.carlsbad.nm.us' and 'BUILD: WDSPROD\_20100622a'.

### C.35 Transportation Reports – PCB Certificate of Disposal Report

Access to the PCB Certificate of Disposal Report is restricted to the Transportation users. The report is generated using the following user-defined report criteria: Shipping Site, Shipment Number, Shipment Receipt Start Date and Shipment Receipt End Date. The wildcard symbol (%) is available for the Shipment Number report criteria. The software defaults the Shipment Receipt Start Date to the current date minus 14 days and the Shipment Receipt End Date to the current date. An option exists to include Only Completely Emplaced Shipments. The report displays the following data for PCB containers associated with shipments that meet the user-specified report criteria:

## Appendix C - Reports

Shipment Number, Manifest Tracking Number, Container Number, and Emplacement Date. The report displays data in the following sorted order: Shipment Number, empty package weight (heaviest to lightest), Assembly Number (not shown), Container Number. The report output can be generated in PDF or CSV format. The software provides selection values based on active and expired reference table records for the Shipping Site report criteria.

**Figure C-30. PCB Certificate of Disposal Report**

The screenshot displays the WDS (Waste Data System) web interface. At the top left is the WDS logo and the text 'WASTE DATA SYSTEM'. To the right is a 'LOG OUT' button and the date/time '7/7/2010 10:11'. Below the logo are three tabs: 'DASHBOARD', 'AD-HOC QUERY', and 'SCRIPT INTERFACE'. A search bar with a 'Container' dropdown and a 'SEARCH' button is located to the right of the tabs. The main section is titled 'PCB CERTIFICATE OF DISPOSAL REPORT'. It contains a form with the following fields: 'Receipt Start Date' (6/23/2010), 'Receipt End Date' (7/7/2010), 'Site' (All), 'Shipment Number' (%), and 'Include Only Completely Emplaced Shipments?' (N). There are also radio buttons for 'PDF' and 'CSV' output formats, and a 'GENERATE REPORT...' button. At the bottom left are links for 'DASHBOARD' and 'USER PREFERENCES'. At the bottom right is a box containing 'INSTANCE: prd01.wipp.carlsbad.nm.us' and 'BUILD: WDSPROD\_20100622a'.

### C.36 Transportation Reports – Waste Stream Profile Hazardous Codes Report

Access to the Waste Stream Profile Hazardous Codes Report is restricted to the Transportation users. The report is generated using Waste Stream Profile as the user-defined report criteria. Selection values are provided based on active reference table records for the Waste Stream Profile report criteria. The report displays the following data for the user-specified waste streams: Waste Stream Profile, Date Approved, EPA Form Code, Waste Type Code, AK Sufficiency Determination flag, AKSD Date, Samples Required flag, Solidified/Vitrified flag, Ship Hold flag, Check Container Lot List flag, Process Knowledge flag, Graphite >1% flag, and associated Hazardous Codes. The report output is generated in PDF format.

## Appendix C - Reports

**Figure C-31. Waste Stream Profile Hazardous Codes Report**

WDS WASTE DATA SYSTEM

7/7/2010 10:31 LOG OUT

DASHBOARD AD-HOC QUERY SCRIPT INTERFACE

Container SEARCH

WASTE STREAM PROFILE HAZARDOUS CODES REPORT

Waste Stream Profile All

GENERATE REPORT...

DASHBOARD | USER PREFERENCES

INSTANCE: prd01.wipp.carlsbad.nm.us  
BUILD: WDSPROD\_20100622a

AECHDM  
AECHHM  
AERHDM  
BLCHDN.001  
BN004  
BN161  
BN211  
BN222  
BN243  
BN252  
BN296  
BN304  
BN510  
BN835  
BN836  
BNINW216  
BNINW218  
GEVNC.01  
ID-ANLE-S5000  
ID-HFEF-S5400-RH  
ID-INTEC-RH  
ID-MFC-S5400-RH  
ID-NT-RF-DECON  
ID-NTLBL-S3900  
ID-NTLBL-S5400  
ID-NTLLBL-S5400  
ID-NTLLNL-S3900  
ID-NTLLNL-S5400  
ID-NTLRC-S5400

### C.37 Reference Table Reports

The Reference Table reports are available to the Shipper/Generator, Waste Handling Operations, Shipment Confirmation, and DA user groups. The reference tables that create many of the reports shown in Figure C-28 are typically maintained by the Database Administrators or developers.



## Appendix C - Reports

Figure C-32. Reference Table Reports Example

**WDS**  
WASTE DATA SYSTEM

7/20/2010 8:58

LOG OUT

DASHBOARD AD-HOC QUERY SCRIPT INTERFACE

Container SEARCH

**REFERENCE TABLE REPORTS**

**PDF Versions**

- Analytes Reference Data Report
- Aspiration Methods Reference Data Report
- Filter Models Reference Data Report
- Matrix Codes Reference Data Report
- Radionuclides Reference Data Report
- Waste Stream Profiles Reference Data Report

**HTML Versions**

<a href="#">REF ACTION ITEM TYPE</a>	<a href="#">REF ACTION PRIORITY</a>	<a href="#">REF ACTION STATUS</a>
<a href="#">REF ANALYTES</a>	<a href="#">REF ASM MAT PARMS</a>	<a href="#">REF ASPIRATION METHODS</a>
<a href="#">REF ASSEMBLY FGE LIMITS</a>	<a href="#">REF CL ACTIONS</a>	<a href="#">REF CNTR STATUS CODES</a>
<a href="#">REF CONSTANTS</a>	<a href="#">REF CONTAINER BASE TYPES</a>	<a href="#">REF CONTAINER TYPES</a>
<a href="#">REF CONTAINER TYPE DOSE LIMITS</a>	<a href="#">REF CONTAINER TYPE FGE LIMITS</a>	<a href="#">REF CONTAINER TYPE PECI LIMITS</a>
<a href="#">REF DASHBOARDS</a>	<a href="#">REF DOT DESCRIPTIONS</a>	<a href="#">REF EMAIL LISTS</a>
<a href="#">REF EVALUATION CODES</a>	<a href="#">REF EVENT CODES</a>	<a href="#">REF FILTER MODELS</a>
<a href="#">REF HAZ CODES</a>	<a href="#">REF LOCATIONS</a>	<a href="#">REF LOCATION LIMITS</a>
<a href="#">REF MATRIX CODES</a>	<a href="#">REF MAT PARMS</a>	<a href="#">REF MAT PARM CATEGORIES</a>
<a href="#">REF MAT PARM GROUPS</a>	<a href="#">REF MAX DIFF LIMITS</a>	<a href="#">REF METHODS</a>
<a href="#">REF METHOD TYPES</a>	<a href="#">REF MGO CNTRS</a>	<a href="#">REF MGO MAT PARMS</a>
<a href="#">REF NUCLIDES</a>	<a href="#">REF OVERPACK CONFIGURATIONS</a>	<a href="#">REF OVERPACK INNER TYPES</a>
<a href="#">REF PACKAGING</a>	<a href="#">REF PACKAGING TYPES</a>	<a href="#">REF PANEL VOLUME LIMITS</a>
<a href="#">REF PAYLOAD CONFIGURATIONS</a>	<a href="#">REF PROCEDURE INPUT TYPES</a>	<a href="#">REF RESET REASONS</a>
<a href="#">REF ROLES</a>	<a href="#">REF SAMPLE PURPOSES</a>	<a href="#">REF SAMPLE TYPES</a>
<a href="#">REF SHIPPING PURPOSES</a>	<a href="#">REF SHIP STATUS CODES</a>	<a href="#">REF SITES</a>
<a href="#">REF SITE PREFIXES</a>	<a href="#">REF SITE PROGRAMS</a>	<a href="#">REF SITE PROGRAM METHODS</a>
<a href="#">REF SITE PROGRAM METHOD DATES</a>	<a href="#">REF SITE PROGRAM METHOD PROCS</a>	<a href="#">REF SITE PROGRAM PROCEDURES</a>
<a href="#">REF SITE USER AUTHS</a>	<a href="#">REF TRACTOR TRAILERS</a>	<a href="#">REF TRAILER TYPES</a>
<a href="#">REF TRANSPORTERS</a>	<a href="#">REF WAC LIMITS</a>	<a href="#">REF WAC SURF CONTAM LIMITS</a>
<a href="#">REF WSPF CNTRS</a>	<a href="#">REF WSPF CONTENT CODES</a>	<a href="#">REF WSPF HAZ CODES</a>
<a href="#">REF WSPF MATRIX CODES</a>	<a href="#">REF WSPF MAT PARMS</a>	<a href="#">REF WSPF SITE PROGRAMS</a>
<a href="#">REF WS PROFILES</a>		

DASHBOARD | USER PREFERENCES

INSTANCE: prd02.wipp.carlsbad.nm.us  
BUILD: WDS\_20100719a

REF\_ACTION\_ITEM\_TYPE: The Action Item Type report stores the action item type and display order.

REF\_ACTION\_PRIORITY: The Action Priority report provides the action priority symbol and display order.

REF\_ACTION\_STATUS: The Action Status report provides the action priority symbol and display order.

REF\_ASM\_MAT\_PARMS: The ASM Material Parameter report provides the container type, material parameter ID, the ASM type and weight of the material parameter.

## Appendix C - Reports

**REF\_ASPIRATION\_METHODS:** The Aspiration Methods report shows the container aspiration method IDs that are available for selection by users who submit waste container data to the WDS. Example: Aspiration Method 1 = Aspiration Time Based on Closure Date.

**REF\_CL\_ACTIONS:** The CL Actions report provides the action symbol and Description. Examples: A = Approved; D = Deleted; U = Updated; I = Inserted.

**REF\_CNTR\_STATUS\_CODES:** The Container Status report provides information about each container status. The report includes the Code, description and display order. Examples: PRESUB\_CHARZ = Pre-submittal to Characterization; PENDING\_CHARZ = Pending Characterization Data Approval. The status codes included in this reference table report are described in detail in Section 7.0.

**REF\_CONSTANTS:** The Constants report provides information about the constants used in WDS. The report includes the field name, value and units. Examples: MIN\_LINER\_HOLE\_SIZE = 7.62 millimeters; CURIE\_TO\_NANO\_CONV = 10000000.

**REF\_CONTAINER\_BASE\_TYPES:** The Container Base Types report provides information about each container type. The report includes the Type Code, Container Volume, Tare weight of each container, and associated weight uncertainty and waste volume. Example: 55-Gallon Drum = Type Code 1. The Container Volume = .21 m<sup>3</sup>. The nominal container tare weight = 29 kg and the weight uncertainty = 1 kg. The waste volume = .21 m<sup>3</sup>.

**REF\_CONTAINER TYPES:** The Container Types report provides information about each container type. The report includes the Type Code, Handling Code, Maximum Gross weight of each container and functional use.

**REF\_CNTR\_TYPE\_FGE\_LIMITS:** The Container Type FGE Limits report provides the FGE limits associated with Technical Safety Requirements (TSR), WAP/WAC, and transportation-related edit/limit checks on a container basis.

**REF\_CONTAINER\_TYPE\_DOSE\_LIMITS:** The Container Type Dose Limits report provides the Dose Rate limits associated with TSRs and WAC edit/limit checks on a container basis.

**REF\_CONTAINER\_TYPE\_PECI\_LIMITS:** The Container Type Plutonium Equivalent Curie (PE-Ci) Limits report provides the PE-Ci limits that are associated with TSRs and WAC edit/limit checks on a container basis.

**REF\_DASHBOARDS:** The Dashboards report lists ID, Dashboard File name, description and Role ID. Example: sg\_dashboard.jsp is the Shipper/Generator dashboard and the Role ID is a number that is known by the Database Administrators.

**REF\_DOT\_DESCRIPTIONS:** The DOT Descriptions report lists the DOT descriptions available in a dropdown menu on the Shipment form. Each package is assigned a DOT



## Appendix C - Reports

Description prior to shipment. The DOT Description is documented on the Hazardous Waste Manifest or Bill of Lading that accompanies each waste shipment. Example: RQ, UN2916, Radioactive Material, Type B (U) Package, Non-fissile 7.

REF\_EMAIL\_LISTS: The Email Lists report stores the various email distribution lists for email messages that are sent to the users from the WDS.

REF\_EVALUATION\_CODES: The Evaluation Codes report lists Evaluation Codes and a Description of each code. Example: DI\_CERT\_ALL = Data Integrity Overall Evaluation – Certification Level

REF\_EVENT\_CODES: The Event Codes report lists events and a description of each event that occurs in the WDS.

REF\_EXIT\_CODES: The Exit Codes reference table report lists each error message that may be returned by the database to the user when a data submittal does not pass edit/limit checks.

REF\_FILTER\_MODELS: The Filter Model report lists container filters. The report includes the filter model number, description, and H2 diffusivity value for each filter entered into the reference table. Example: NF013 = Nucfill Carbon Composite Filter approved for use on payload containers with a diffusivity value of 3.7E-06.

REF\_HAZ\_CODES: The Hazardous Codes report lists all RCRA hazardous waste numbers authorized by the WIPP HWFP to be applied to wastes that are characterized for disposal at WIPP.

REF\_LOCATIONS: The Locations report lists all panels and rooms where waste is emplaced in the WIPP underground. Example: CH waste is emplaced in Panel 4, Room 3.

REF\_LOCATION\_LIMITS: The Location Limits report shows the following location limits as maximum values: 8 panels for the WIPP Underground, 7 rooms per panel, 200 rows per room, and 6 columns per row.

REF\_MATRIX\_CODES: The Matrix Codes report lists and describes each Matrix Code. Example: S3100 = Inorganic Homogeneous Solids.

REF\_MAT\_PARMS: The Material Parameters report provides the Waste Material Parameter Number and a description of each material parameter. Example: Waste Material Parameter 1 = Iron-base metal alloys.

REF\_MAT\_PARM\_CATEGORIES: The Material Parameter Categories report provides the following material parameter categories: W = Waste Material; S = Steel Packaging Material; C = Cellulosic Packaging Material; P = Plastic Packaging Material; L = Steel Liner Material; and E = Emplacement Material.

## Appendix C - Reports

**REF\_MAT\_PARM\_GROUPS:** The Material Parameter Groups reference table report lists material parameters and a description of material parameters that are tracked as waste containers are emplaced at WIPP. Examples: Non-FE = Non-Ferrous Metal; FE = Ferrous Metal; CPR = Cellulosic, Plastic, Rubber; MGO = Magnesium Oxide (MgO); OTHER = Other Material.

**REF\_MAX\_DIFF\_LIMITS:** The Maximum Differential Limits report provides the following maximum differential limits (%), which are enforced when container data are submitted to the database: Material Parameter Differential = 5%; Package Parameter Differential = 50%; Nuclear Mass Differential = 5%; TRU Alpha Activity (TAA) Differential = 5%; TRU Alpha Activity Concentration (TAAC) Differential = 5%; FGE Differential = 5%; Decay Heat = 5%.

**REF\_METHODS:** The Methods report lists assay methods, RTR methods, VE methods, headspace gas sampling methods, flammable gas analysis methods and solid sampling methods.

**REF\_METHOD\_TYPES:** The Method Types report provides the following method types: A = Analytical Characterization Method; N = NDE Method; R = Radioassay Method

**REF\_MGO\_CNTRS:** The MgO Controls report provides the following MgO sack types: 901 = Supersack; 902 = Between Stack Sack; 903=Tall Sack; 904 = 4,100 lb supersack; 905 = 25 lb minisack.

**REF\_NUCLIDES:** The Nuclides report provides the Symbol/Mass Number, Name, specific activity (ci/g), S200A Limit (ci), S200B Limit (ci), DOT A2 Quantity, DOT RQ value, and FGE factor. The report also contains information that is used to categorize nuclides as TRU, EPA-Required or Fissile.

**REF\_OVERPACK\_CONFIGURATIONS:** The Overpack Configurations report lists valid overpack configurations and the limits for the maximum number of inner containers. Examples: three inner containers per Facility Canister; six 85-gal inner containers per TDOP; four 55-gal drums per SWB; ten 55-gal drums per TDOP; three inner containers per Fixed Lid Canister; one SWB per TDOP.

**REF\_PACKAGING:** The Packaging report lists all packages (TRUPACT-II, HALFPACT and 72-B Casks) and the empty package weight in kg.

**REF\_PACKAGING\_TYPES:** The Packaging Types report lists all packaging types (TRUPACT-II, HALFPACT and 72-B Casks) and the maximum number of packages per shipment. Examples: TRUPACT = TRUPACT-II Shipping Vessel w/3 packages per shipment; 72-B = 72-B Shipping Cask w/3 package per shipment.

**REF\_PANEL\_VOLUME\_LIMITS:** The Panel Volume Limits report lists each panel located in the WIPP underground and the total CH Volume Limit, the RH Canister Limit

## Appendix C - Reports

and the RH Volume limit per panel. Example: Panel 4 – CH Volume Limit = 18,750 m<sup>3</sup>; RH Volume Limit = 400 m<sup>3</sup>; RH Canister Limit = 356 canisters.

REF\_PAYLOAD\_CONFIGURATIONS: The Payload Configurations report provides the Container Base Type, Maximum Assemblies per Package, Maximum number of containers per assembly, material handling weight and the Package Description.

REF\_RESET\_REASONS: The Reset Reasons report provides reasons that containers are reset from approved status to pre-submittal status. The reset reasons are: Failed Container Integrity, Failed Flammability, Change TRUCON Code, Change Shipping Category and Other (requires comment).

REF\_ROLES: The Roles report lists each user role and a description. Example: Shipper/Generator = Shipper/Generator.

REF\_SAMPLE\_PURPOSES: The Sample Purposes provided in the report are T = Transportation; P = Permit, and B = Both. The sample purposes are associated with reporting of headspace gas and flammable gas sampling and analysis results.

REF\_SAMPLE\_TYPES: The Sample Types report lists sample types and a description of each sample type. Examples: HS-P = Headspace Gas – Permit; HS = T = Headspace Gas-Transportation; HS = Headspace Gas- Both Permit and Transportation.

REF\_SHIPPING\_PURPOSES: The Shipping Purposes reference table report provides the shipping purposes, description and display order that may be designated when submitting a shipment to the WDS. The shipping purposes are: D = Disposal; Z = Characterization; C = Certification; and T = Treatment.

REF\_SHIP\_STATUS\_CODES: The Shipping Status Codes report provides the shipping status codes that are used to track shipment data.

REF\_SITES: The Sites report lists each Shipper/Generator site, address, technical contact, EPA ID, and a flag to indicate whether the site is authorized to ship PCB remediation wastes to WIPP for disposal.

REF\_SITE\_PREFIXES: The Site Prefixes report lists each prefix that is appended to payload containers before they are shipped to WIPP for disposal. Example: RF = Rocky Flats.

REF\_TRANSPORTERS: The Transporters reference table report () provides the EPA ID and name of each trucking company that transports waste under a DOE CBFO contract.

### **C.37. Business Reports - Intersite Shipment Summary Report**

The user is provided with functionality to generate the report using the following user-defined report criteria: Originating Site and Destination Site dropdown menus,

## Appendix C - Reports

Shipment Receipt Start Date, and Shipment Receipt End Date. Selection values are provided based on reference table records for the Originating Site and Destination Site report criteria defaulting each to "All." The user may select a site from the dropdown menu if data for only one site is required. The software defaults the Shipment Receipt Start Date to null and defaults the Shipment Receipt End Date to the current date.

**Figure C-33: Intersite Shipment Summary Report – User Criteria Selection Form**

The screenshot shows the 'INTERSITE SHIPMENT SUMMARY REPORT' form in the WDS (Waste Data System) interface. The top navigation bar includes 'DASHBOARD', 'AD-HOC QUERY', 'SCRIPT INTERFACE', and 'REPORT BUILDER'. The 'REPORT BUILDER' tab is active. The form contains the following fields and controls:

- Originating Site:** A dropdown menu with 'All' selected. A list of sites is visible: ANL-E, ANL-W, BCS, CCP, HANFORD, INL, LANL, LBNL, LLNL, MOUND, MURR, NTS, ORNL, RFETS, SRS, VNC, WIPP.
- Destination Site:** A dropdown menu with 'All' selected.
- Shipment Receipt Start Date:** A date field with a calendar icon.
- Shipment Receipt End Date:** A date field with a calendar icon, showing '7/21/2010'.
- Container:** A dropdown menu with 'Container' selected.
- SEARCH:** A magnifying glass icon.
- GENERATE REPORT...:** A button to generate the report.
- Footer:** 'DASHBOARD | USER PREFERENCE', 'INSTANCE: prd02.wipp.carlsbad.nm.us', and 'BUILD: WDS\_20100719a'.

The user does not have the option of typing the dates directly into the date fields. The user is required use the calendar icon to select a date that the software inputs to the date field. The user selects the Date Calendar Icon and the Insert Date calendar appears on the screen. The user then toggles backward or forward to the correct calendar year, selects the month from the dropdown menu and selects the day from the calendar. When the Set button is clicked, the date is inserted into the date field on the form.

**Figure C-34: Date Calendar Icon Functionality**

The screenshot shows the 'INTERSITE SHIPMENT SUMMARY REPORT' form with the 'Insert Date' calendar window open. The calendar window displays the month of March 1999. The date '7/2/2010' is entered in the 'Shipment Receipt End Date' field. The 'Set' button is visible at the bottom of the calendar window. The background shows the same WDS interface as Figure C-33, but with the 'AD-HOC QUERY' tab active.

The Intersite Shipment Summary report displays the following data grouped by Originating Site and Destination Site for shipments with destinations other than WIPP that meet the user-defined report criteria: number of shipments, shipped container

## Appendix C - Reports

volume in cubic meters (m<sup>3</sup>). The report displays the following report totals for the specified shipment receipt date range: total number of shipments, total shipped container volume (m<sup>3</sup>). The report output is generated in PDF format.

In the example below, a summary of all intersite shipments that have been input to the database since the inception of the Intersite Shipment Module on November 6, 2008, is shown. The intersite shipment summary report will not show data for intersite shipments that were input to the WIPP Waste Information System (WWIS) Test Instance prior to November 6, 2008.

**Figure C-35: Intersite Shipment Summary Report Output (Example)**

# Waste Isolation Pilot Plant

## Intersite Shipment Summary Report

CBFO\_TEST\_USER

July 27, 2010 9:13 AM

Page 2 of 2

Originating Site	Destination Site	# of Shipments	Container Type	# of Cntrs	Shipped Cntr Volume (m^3)
HANFORD	INL	8	TEN DRUM OVERPACK	24	108.00
INL	SRS	1	STANDARD WASTE BOX	2	3.76
LANL	INL	1	STANDARD WASTE BOX	2	3.76
LLNL	INL	6	55-GALLON DRUM	214	44.94
LLNL	LLNL	1	55-GALLON DRUM	1	0.21
NTS	INL	17	55-GALLON DRUM	82	17.22
			STANDARD WASTE BOX	78	146.64
VNC	INL	1	55-GALLON DRUM	7	1.47
Totals:		35		410	326.00

### C.38. Business Reports - Site Container Summary Report

The user is provided with functionality to generate the report using the following user-defined report criteria: Site, Certification Program, Waste Stream Profile, Container Type, Start Date, and End Date. Selection values in the dropdown menus are provided based on reference table records for the Site, Certification Program, Waste Stream Profile, and Container Type (base type) criteria defaulting each to "All." The software defaults the Start Date to null and default the End Date to the current date. Users should note that it may take up to 10 minutes to run this report.

## Appendix C - Reports

**Figure C-36: Site Container Summary Report – User Criteria Selection Form**

The screenshot shows the WDS (Waste Data System) interface. At the top left is the WDS logo. To the right, it says 'USER, BUSINESS REPORTS' and 'LOG OUT'. Below this, the date '7/2/2010 9:18' is displayed. A navigation bar contains 'DASHBOARD', 'AD-HOC QUERY', and 'SCRIPT INTERFACE'. Below the navigation bar, there is a search bar with a 'Container' dropdown and a 'SEARCH' button. The main section is titled 'SITE CONTAINER SUMMARY REPORT'. It contains a form with the following fields: 'Site' (dropdown menu set to 'All'), 'Start Date' (calendar icon), 'End Date' (calendar icon set to '7/2/2010'), 'Certification Program ID' (dropdown menu set to 'All'), 'Waste Stream Profile' (dropdown menu set to 'All'), and 'Container Type' (dropdown menu set to 'All'). A 'GENERATE REPORT...' button is located to the right of these fields. At the bottom left, there is a link 'DASHBOARD | USER PREFERENCES'. At the bottom right, a box displays 'INSTANCE: tst01.wipp.carlsbad.nm.us' and 'BUILD: WDSPROD\_20100622a'.

The report displays the following data summarized by container type for the user-defined report criteria:


- Number of certified waste containers remaining in the site inventory (not yet shipped) at the end of the reporting period (DA approval date prior or equal to end date),
- Number of waste containers shipped during the reporting period (shipment send date within date range),
- Number of waste containers emplaced at WIPP during the reporting period (assembly disposal date within date range).

The report includes a footnote stating that "certified container" is defined as "Data Administrator approved." The report also includes a footnote stating that only the waste containers (inner containers) are included in the report counts when overpacked for shipment or emplacement. The report displays subtotals for the reported values at the following reporting levels: Certification Program, Site, and Report Total. The report sorts the displayed data by Site, Certification Program, Waste Stream Profile, and Container Type. The report output is generated in PDF format.

# Waste Data System User's Manual DOE/WIPP-09-3427, Rev. 2

## Appendix C - Reports


**Figure C-36: Site Container Summary Report Output (Example)**

<div style="display: flex; justify-content: space-between; align-items: center;">  <div> <b>Waste Isolation Pilot Plant</b>  <b>Site Container Summary Report</b> </div> <div style="text-align: right;"> MSTRUM  July 02, 2010 10:13 AM  Page 2 of 4 </div> </div>				# Certified* Waste Cntrs Remaining (not yet shipped)	# Waste Cntrs Shipped to WIPP **	# Waste Cntrs Emplaced at WIPP **
Site	Certification Program	Waste Stream	Container Type			
HANFORD	RL - HANFORD	RLCBWD.001	55-GALLON DRUM	44	0	0
		RLCFFD.001	55-GALLON DRUM	17	0	0
		RLETECD.001	55-GALLON DRUM	77	0	0
		RLEXOD.001	55-GALLON DRUM	33	0	0
		RLM209ED.001	55-GALLON DRUM	54	0	0
		RLM231ZD.001	55-GALLON DRUM	8	0	0
		RLM233SD.001	55-GALLON DRUM	17	0	0
			STANDARD WASTE BOX	11	0	0
		RLM300D.001	55-GALLON DRUM	67	0	0
		RLM308D.001	55-GALLON DRUM	14	0	0
		RLM325D.001	55-GALLON DRUM	122	0	0
			STANDARD WASTE BOX	1	0	0
		RLMGVALD.001	55-GALLON DRUM	59	0	0
		RLMPDT.001	12-INCH PIPE OVERPACK	1	0	0
			55-GALLON DRUM	308	0	0
			STANDARD WASTE BOX	9	0	0
		RLMPURX.001	55-GALLON DRUM	16	0	0
			STANDARD WASTE BOX	1	0	0
		RLMWARD.001	55-GALLON DRUM	29	0	0
		RLSWOCD.001	55-GALLON DRUM	29	0	0
		Certification Program Totals:		917	0	0
		Site Totals:		917	0	0
INL	BN - AMWTP AT INL	BN004	55-GALLON DRUM	8	0	0
		BN222	55-GALLON DRUM	74	0	0
		BN510	100-GALLON DRUM	133	0	0
		BN835	55-GALLON DRUM	4	0	0
		BN836	55-GALLON DRUM	4	0	0
		BNINW216	55-GALLON DRUM	24	0	0
		BNINW218	55-GALLON DRUM	52	0	0

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### Appendix C - Reports

		<b>Waste Isolation Pilot Plant Site Container Summary Report</b>			MSTRUM July 02, 2010 10:13 AM Page 3 of 4	
Site	Certification Program	Waste Stream	Container Type	# Certified* Waste Cntrs Remaining (not yet shipped)	# Waste Cntrs Shipped to WIPP **	# Waste Cntrs Emplaced at WIPP **
			Certification Program Totals:	299	0	0
	C8 - CCP AT INL - CH	ID-RF-S3114	55-GALLON DRUM	163	0	0
			STANDARD WASTE BOX	8	0	0
		ID-RF-S3150-A	55-GALLON DRUM	70	0	0
		ID-RF-S5100-A	55-GALLON DRUM	22	0	0
		ID-RF-S5126	55-GALLON DRUM	44	0	0
		ID-RF-S5300-A	55-GALLON DRUM	14	0	0
		ID-SDA-DEBRIS	55-GALLON DRUM	35	0	0
		ID-SDA-SLUDGE	55-GALLON DRUM	895	0	0
		ID-SDA-SOIL	55-GALLON DRUM	832	0	0
			Certification Program Totals:	2,083	0	0
	C9 - CCP AT INL - RH	ID-HFEF-S5400-RH	55-GALLON DRUM	8	0	0
			Certification Program Totals:	8	0	0
			Site Totals:	2,390	0	0
<hr/>						
LANL	C4 - CCP AT LANL - CH	LA-CIN02.001	55-GALLON DRUM	8	0	0
		LA-MHD01.001	12-INCH PIPE OVERPACK	47	0	0
			55-GALLON DRUM	307	0	0
		LA-MHD03.001	55-GALLON DRUM	25	0	0
		LA-MHD08.001	55-GALLON DRUM	31	0	0
		LA-MIN03-NC.001	55-GALLON DRUM	102	0	0
		LA-OS-00-01.001	12-INCH PIPE OVERPACK	13	0	0
			S100 PIPE OVERPACK	20	0	0
			Certification Program Totals:	553	0	0
			Site Totals:	553	0	0
<hr/>						
ORNL	C6 - CCP AT ORNL - CH	OR-NFS-CH-HET-A	55-GALLON DRUM	2	0	0
		OR-NFS-CH-SOIL	55-GALLON DRUM	163	0	0
		OR-RADP-CH-HET	55-GALLON DRUM	31	0	0



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## Appendix C - Reports

# Waste Isolation Pilot Plant Site Container Summary Report

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Site	Certification Program	Waste Stream	Container Type	# Certified* Waste Cntrs Remaining (not yet shipped)	# Waste Cntrs Shipped to WIPP **	# Waste Cntrs Emplaced at WIPP **
		OR-REDC-CH-HET	55-GALLON DRUM	20	0	0
		OR-RF-CH-HET	55-GALLON DRUM	49	0	0
			Certification Program Totals:	265	0	0
	C7 - CCP AT ORNL - RH	OR-REDC-RH-HET	55-GALLON DRUM	9	0	0
			Certification Program Totals:	9	0	0
			Site Totals:	274	0	0
SRS	C1 - CCP AT SRS - CH	SR-AGNS-HET	55-GALLON DRUM	2	0	0
		SR-MD-HET	55-GALLON DRUM	4	0	0
		SR-SWMF-HET-A	55-GALLON DRUM	16	0	0
		SR-W026-221F-HET	55-GALLON DRUM	6	0	0
		SR-W026-772F-HET	55-GALLON DRUM	57	0	0
		SR-W027-221F-HETA	55-GALLON DRUM	14	0	0
		SR-W027-221H-HET	55-GALLON DRUM	33	0	0
		SR-W027-221H-HET-C	55-GALLON DRUM	2	0	0
		SR-W027-221H-HET-D	55-GALLON DRUM	19	0	0
		SR-W027-235F-HET	55-GALLON DRUM	17	0	0
		SR-W027-773A-HET	55-GALLON DRUM	8	0	0
		SR-W027-FB-PRE86-C	55-GALLON DRUM	7	0	0
			Certification Program Totals:	185	0	0
			Site Totals:	185	0	0
			REPORT TOTALS:	4,319	0	0

\* Data Administrator approved as of report End Date.

\*\* Only the waste containers (inner containers) are included in the counts when overpacked for shipment or emplacement.

### C.39. Business Reports - Waste Removal Summary Report

The user is provided with functionality to generate the report using the following user-defined report criteria: Handling Code, Site, Certification Program, Start Date, and End Date. Selection values from the dropdown menus are provided based on reference table records for the Site and Certification Program criteria defaulting each to "All." The software defaults the Start Date to the first day of the previous month and the End Date to the last day of the previous month. Refer to the instructions in Section C.37 of this document for details about use of the Insert Date Calendar functionality. A dropdown menu is available to allow the user to indicate whether the report should be based on waste containers or payload containers. The default is inner waste container reporting as shown in Figure C-37 below.

Appendix C - Reports

**Figure C-37: Waste Removal Summary Report – User Criteria Selection Form**

The screenshot shows the WDS (Waste Data System) interface. At the top left is the WDS logo. At the top right, it says 'USER, BUSINESS REPORTS' and 'LOG OUT' with a timestamp '7/2/2010 10:45'. Below this is a navigation bar with 'DASHBOARD', 'AD-HOC QUERY', and 'SCRIPT INTERFACE'. A search bar with a 'Container' dropdown and a 'SEARCH' button is on the right. The main section is titled 'WASTE REMOVAL SUMMARY REPORT'. It contains a form with the following fields: 'Handling Code' (All), 'Certification Program ID' (All), 'Start Date' (6/1/2010), 'Site' (All), 'Containers to report for overpacks:' (waste containers (inner)), and 'End Date' (6/30/2010). There is a 'GENERATE REPORT...' button. At the bottom left, it says 'DASHBOARD | USER PREFERENCES'. At the bottom right, it shows 'INSTANCE: tst01.wipp.carlsbad.nm.us' and 'BUILD: WDSPROD\_20100622a'.

The report displays the following data for the user-defined report criteria:


- Volume (m<sup>3</sup>) removed from site (shipment send date within date range)
- Volume (m<sup>3</sup>) received at WIPP (shipment receipt date within date range)
- Volume (m<sup>3</sup>) emplaced (emplacement assembly disposal date within date range).

The report displays subtotals for the reported values at the following reporting levels: Site, Handling Code, and Report Total. The report sorts the displayed data by Handling Code, Site, and Certification Program.

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## Appendix C - Reports

**Figure C-38: Waste Removal Summary Report Output (Example)**



**Waste Isolation Pilot Plant  
Waste Removal Summary Report**


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**Report Statistics**

Report Version: **1.1**  
 WDS Instance: **tst01.wipp.carlsbad.nm.us**  
 Generated on: **July 02, 2010 11:26 AM**  
 Generated by: **MSTRUM**  
 Total Pages: **2**

**Selection Criteria**

Handling Code: **All**  
 Site: **All**  
 Certification Program: **All**  
 Start Date: **01/01/2010**  
 End Date: **01/30/2010**  
 Containers to report for overpacks: **waste containers (inner)**

<div style="display: flex; justify-content: space-between; align-items: center;">  <div style="text-align: center;"> <b>Waste Isolation Pilot Plant Waste Removal Summary Report</b> </div> <div style="text-align: right;"> <b>MSTRUM</b>            July 02, 2010 11:26 AM            Page 2 of 2         </div> </div>					
Handling Code	Site	Certification Program	Volume (m <sup>3</sup> ) Removed from Site (Shipped to WIPP)	Volume (m <sup>3</sup> ) Received at WIPP	Volume (m <sup>3</sup> ) Emplaced at WIPP
CH	INL	BN - AMWTP AT INL	268.92	256.68	238.50
		C8 - CCP AT INL - CH	97.62	97.62	88.80
	Site Totals:		366.54	354.30	327.30
	LANL	C4 - CCP AT LANL - CH	60.06	60.06	59.22
	ORNL	C6 - CCP AT ORNL - CH	17.64	17.64	17.64
SRS		C1 - CCP AT SRS - CH	150.02	150.02	141.22
Handling Code Totals:			594.26	582.02	545.38
RH	ORNL	C7 - CCP AT ORNL - RH	3.15	3.15	0.63
	VNC	CC - CCP AT VNC - RH	6.51	6.51	5.04
Handling Code Totals:			9.66	9.66	5.67
REPORT TOTALS:			603.92	591.68	551.05

## **APPENDIX D - LIST OF ERROR CODES AND ERROR DESCRIPTIONS**

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Appendix D – List of Error Codes and Error Descriptions

The following is a list and description of each error code that may be returned to the user when data submittals do not pass all edit and limit checks.

<b>Error Code</b>	<b>Error Description</b>
WAP_CHARZ_OVPK	Overpacks cannot be submitted to the WAP characterization evaluation.
WAP_CHARZ_CPN	The certification program ID is null or invalid.
WAP_CHARZ_WSPF	The waste stream profile code is null or invalid.
WAP_CHARZ_WSPF	The waste stream profile code is approved.
WAP_CHARZ_WSCP	The recorded Certification Program ID is not listed in the reference tables for the waste stream profile.
WAP_CHARZ_GEN	The Generator Site is null or invalid.
WAP_CHARZ_WMC	The Waste Matrix Code is null or invalid.
WAP_CHARZ_LEI	The Liner Exists value must be Y or N.
WAP_CHARZ_LPN	A liner hole diameter or no lid must be specified if a liner is present.
WAP_CHARZ_LOP	The Layers of Packaging is null.
WAP_CHARZ_MPE	The container has no material parameter data.
WAP_CHARZ_MPI	One or more material parameter records are incomplete.
WAP_CHARZ_HCN	Hazardous codes must be specified for a MTRU waste stream profile code.
WAP_CHARZ_HCU	One or more container hazardous codes are not recorded for the waste stream profile code.
WAP_CHARZ_NDE	At least one set of NDE method data must be provided.
WAP_CHARZ_SAM	At least one set of sample data must be provided.
WAP_CHARZ_SAMI	One or more sample records are incomplete.
WAP_CHARZ_SAMP	The sample purpose associated with one or more sample records is not permit-related.
WAP_CHARZ_ADN	One or more sample records do not have associated analysis data.
WAP_CHARZ_ADI	One or more sample analysis data records are incomplete.
WAP_CHARZ_TAR	One or more target analytes were not included in the analysis set.

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<b>Error Code</b>	<b>Error Description</b>
WAP_CHARZ_IDC	The IDC Code is null.
WAP_CERT_CPN	The certification program ID is null or invalid.
WAP_CERT_GEN	The Generator Site is null or invalid.
WAP_CERT_GWN	The gross weight is null.
WAP_CERT_GWUN	The gross weight uncertainty is null.
WAP_CERT_WMC	The Waste Matrix Code is null or invalid.
WAP_CERT_WSCP	The recorded Certification Program ID is not listed in the reference tables for the waste stream profile.
WAP_CERT_WSPF	The waste stream profile code is null or invalid.
WAP_CERT_WSPFA	The waste stream profile code is unapproved.
WAP_CERT_LEI	The Liner Exists value must be Y or N.
WAP_CERT_LPN	A liner hole diameter or no lid must be specified if a liner is present.
WAP_CERT_LOP	The Layers of Packaging is null.
WAP_CERT_MPE	The container has no material parameter data.
WAP_CERT_MPI	One or more material parameter records are incomplete.
WAP_CERT_HCIN	The handling code is null.
WAP_CERT_HCN	Hazardous codes must be specified for a MTRU waste stream profile code.
WAP_CERT_HCU	One or more container hazardous codes are not recorded for the waste stream profile code.
WAP_CERT_NDE	At least one set of NDE method data must be provided.
WAP_CERT_NDN	The neutron dose equivalent rate is null.
WAP_CERT_SAM	At least one set of sample data must be provided.
WAP_CERT_SAMI	One or more sample records are incomplete.
WAP_CERT_SAMT	One or more sample records have an invalid or null sample type.
WAP_CERT_ADN	One or more sample records do not have associated analysis data.

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<b>Error Code</b>	<b>Error Description</b>
WAP_CERT_BGN	The beta/gamma dose equivalent rate is null.
WAP_CERT_CDN	The certification date is null.
WAP_CERT_CIN	The closure date is null.
WAP_CERT_CNN	The container number is null.
WAP_CERT_CTI	The container type provided is null or invalid.
WAP_CERT_FNP	At least one valid filter must be recorded for the container.
WAP_CERT_ADI	One or more sample analysis data records are incomplete.
WAP_CERT_TAR	One or more target analytes were not included in the analysis set.
WAP_CERT_IDC	The IDC Code is null.
WAC_ALL_APP	An unhandled exception caused the evaluation to end before completion.
WAC_ALL_ASCE	The removable alpha surface contamination exceeds the limit applied.
WAC_ALL_ASCN	The removable alpha surface contamination is null.
WAC_ALL_BGD	The beta/gamma dose equivalent rate is null.
WAC_ALL_BSCE	The removable alpha surface contamination exceeds the limit applied.
WAC_ALL_BSCN	The removable alpha surface contamination is null.
WAC_ALL_CDN	The certification date is null.
WAC_ALL_CPN	The certification program ID is null or invalid.
WAC_ALL_EPA	One or more EPA-tracked radionuclides are not in the container's input values.
WAC_ALL_FILZ	At least one filter record must be provided.
WAC_ALL_FMI	One or more filter model numbers are not in the reference tables.
WAC_ALL_HAZ	The container must have at least one hazardous code since the waste stream is marked as MTRU.
WAC_ALL_NASP	This certification program (based on its site) is not authorized to ship PCB waste.
WAC_ALL_NDR	The neutron dose equivalent rate is null.

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Appendix D – List of Error Codes and Error Descriptions

<b>Error Code</b>	<b>Error Description</b>
WAC_ALL_FGE	The Pu-239 FGE is null.
WAC_ALL_FGEU	The Pu-239 FGE uncertainty is null.
WAC_ALL_NUC	No radionuclide records have been provided for the container.
WAC_ALL_NUCI	One or more radionuclide records have incomplete data.
WAC_ALL_NUCN	One or more radionuclide records have an activity, activity uncertainty, mass, or mass uncertainty value that is <0 and not equal to -1.
WAC_ALL_OOS	The container has PCB Waste = Y, so the PCB removal from service date must be recorded.
WAC_ALL_PCM	The container has PCB Waste = Y, so the estimated mass of PCBs must be recorded.
WAC_ALL_PECI	The Pu-239 equivalent activity value is null.
WAC_ALL_PRE	The container prefix cannot be checked because the Certification Program ID is null or does not have prefixes assigned to it.
WAC_ALL_PREU	The prefix on the container number is not authorized for the certification program.
WAC_ALL_REV	The WAC Revision number is not provided.
WAC_ALL_REVI	The WAC Revision number is not provided.
WAC_ALL_TAAC	The container TRU Alpha Activity Concentration (nCi/g) is $\leq$ the applied minimum.
WAC_ALL_UNQ	The combination of container number and generator site is not unique.
WAC_ALL_WSCP	The recorded Certification Program ID is not listed in the reference tables for the waste stream profile.
WAP_CERT_WSPF	The waste stream profile code is null or invalid.
WAC_ALL_WSPFA	The waste stream profile code is unapproved.
WAC_CH_B100	The Be $\leq$ 100kg flag must = Y for a drum with Be present and non-compacted waste.
WAC_CH_BED	The Be $\leq$ 1% flag must = Y for an SWB/TDOP with Be present = Y.
WAC_CH_CTN	The PE-Ci limit could not be determined because the container type is null or invalid.
WAC_CH_DOSE	The container total dose rate is > the applied limit.



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<b>Error Code</b>	<b>Error Description</b>
WAC_CH_FGE	The container FGE + 2x Uncertainty is > the limit applied.
WAC_CH_FGEN	No FGE limit was found due to invalid selection of Be, Compaction, and/or polyethylene density flags.
WAC_CH_OPC	The overpack configuration (number and type of inner containers) is not authorized by the WAC.
WAC_CH_OPU	The overpack type is not a WAC-authorized overpack container.
WAC_CH_PCOM	Pipe overpacks cannot contain machine compacted waste.
WAC_CH_PECI	The container Pu-239 equivalent curie (PE-Ci) is > the limit applied.
WAC_CH_SCN	The shipping category is null or empty.
WAC_CH_TCN	The container type provided for the container is null or is not valid based on the container base type reference structure.
WAC_CH_TYPE	The container type is not authorized by the WAC.
WAC_CH_WSPF	The PE-Ci limit could not be determined because the waste stream is null, invalid, or solidified/vitrified waste form is not indicated for the waste stream.
WAC_RH_APL	The canister activity averaged over the volume of the container exceeds the limit applied.
WAC_RH_BE1P	The Be $\leq 1$ % must = Y for a canister with Be present and non-compacted waste.
WAC_RH_BE5	The Be $\leq 5$ kg flag must = Y for an RH payload drum with Be present and compacted waste.
WAC_RH_CCN	The content code is null.
WAC_RH_CHC	This container should be classified as contact-handled.
WAC_RH_CNT	The recorded container type is not a valid RH payload container type.
WAC_RH_DOSE	The container total dose rate is > the applied limit.
WAC_RH_FEM	The recorded container type is not a valid RH payload container type.
WAC_RH_FGE	The container FGE + 2x Uncertainty is > the limit applied.
WAC_RH_FGEN	No FGE limit was found due to invalid selection of Be, Compaction, and/or polyethylene density flags.
WAC_RH_GWL	The recorded gross weight + uncertainty exceed the applied limit.

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Appendix D – List of Error Codes and Error Descriptions

<b>Error Code</b>	<b>Error Description</b>
WAC_RH_PECI	The container Pu-239 equivalent curie (PE-Ci) is > the limit applied.
DSA_ALL_APP	An unhandled exception caused the evaluation to end before completion.
DSA_CH_BEL	CH drums containing non-compacted waste must be marked as Be $\leq$ 100kg when Be is present.
DSA_CH_BE1P	Be must be marked as $\leq$ 1% when present in SWBs and TDOPs.
DSA_CH_CNT	The container type is null or not authorized by the TSR.
DSA_CH_FGE	The container FGE + 2x uncertainty exceeds the limit applied.
DSA_CH_FGEN	The container FGE + 2x uncertainty exceeds the limit applied.
DSA_CH_PECI	The container PE-Ci exceeds the applied limit.
DSA_RH_CNT	The container type is null or not authorized by the TSR.
DSA_RH_FGE	The container FGE + 2x uncertainty exceeds the limit applied.
DSA_RH_FGEN	No FGE limit was found due to invalid selection of Be, Compaction, and/or polyethylene density flags.
DSA_RH_NUM	The number of drums in the canister must be 3 or less.
DSA_RH_PECI	The container PE-Ci exceeds the applied limit.
DI_ALL_APP	Data Integrity application error.
DI_BE_1PCT	The Be $\leq$ 1% flag must be set to Y or N.
DI_BE_BPI	The Be Present flag must be Y or N.
DI_BE_BPN	The Be Present flag is null.
DI_BE_CMB	The Be chemically/mechanically bound indicator must be Y or N for direct-load canisters.
DI_BE_FGE	The FGE + 2xerror for the TBO container is > the limit.
DI_BE_FMM	The overpack has only one inner container - all overpack Be flags must match the inner container.
DI_BE_MCI	The machine compacted flag must be Y or N.
DI_BE_MCN	The machine compacted flag is null.
DI_BE_OBF	One or more inner containers has Be present - the overpack must be marked as Be present = Y.

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<b>Error Code</b>	<b>Error Description</b>
DI_BE_OCF	One or more inner containers have compacted waste - the overpack must be marked as compacted waste.
DI_BE_SON	The separation OK flag must be set for the container.
DI_BE_SOI	The separation OK flag must be Y or N.
DI_CERT_AMA	One or more assay method records have a characterization program ID that is not approved for use with the reported assay method.
DI_CERT_AMC	One or more assay method records have a characterization program ID that is not an approved characterization program.
DI_CERT_AMD	One or more assay method records have an invalid assay date (before 1/1/1970 or after the evaluation date).
DI_CERT_AMDO	One or more assay method records have an assay method that was not approved for use on the assay date.
DI_CERT_AMI	One or more assay method records are incomplete.
DI_CERT_AMN	At least one assay method record must be provided.
DI_CERT_CCN	The TRUCON Code (CH)/Content Code (RH) are null or empty.
DI_CERT_CDE	The recorded certification date is before 1/1/1970.
DI_CERT_CDL	The recorded certification date is after the evaluation date.
DI_CERT_CNIL	The container is not in the list of approved containers associated with the waste stream profile code.
DI_CERT_FDB	One or more filter records have a filter install date that is before 1/1/1970.
DI_CERT_FDL	One or more filter records have a filter install date that is after the evaluation date.
DI_CERT_FDV	One or more filter records have a filter install date that is after the vent date.
DI_CERT_FFN	The fill factor is null.
DI_CERT_FFOR	The fill factor is out of the valid range - 0% to 100%.
DI_CERT_FMI	One or more filter records have an invalid filter model number.
DI_CERT_FQI	One or more filter records have an invalid quantity (valid range is between 1 and 12).
DI_CERT_FRI	One or more filter records are incomplete.

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<b>Error Code</b>	<b>Error Description</b>
DI_CERT_HZM	One or more hazardous codes associated with the waste stream profile code were not reported for the container.
DI_CERT_HZN	No hazardous codes have been reported for the container.
DI_CERT_PECI	The container Pu-239 equivalent curie (PE-Ci) is > the limit applied.
DI_CERT_RNI	One or more radionuclide records have an invalid radionuclide.
DI_CERT_RNN	One or more radionuclide records have values including a negative one, but not all values are negative one.
DI_CERT_RNZ	One or more radionuclide records have values including a zero, but not all values are zero.
DI_CERT_TAAC	The TRU Alpha Activity Concentration is <0.
DI_CERT_TAAI	The TRU Alpha Activity is <0.
DI_CERT_TAAI	The TRU Alpha Activity is null.
DI_CERT_WSCC	The content code is not valid for the waste stream.
DI_ED_UNQ	The combination of container number and generator site is not unique.
DI_ED_DPI	The Destination Program ID is not in the reference tables or is expired.
DI_ED_DPN	The Destination Program ID is null or invalid.
DI_ED_DPR	The Destination Program ID is not a valid destination program.
DI_ED_ICUR	The Current Location ID is not in the reference tables or is expired.
DI_ED_NCUR	The Current Location ID is not a valid location.
DI_ED_SPI	The Shipping Program ID is not in the reference tables or is expired.
DI_ED_SPN	The Shipping Program ID is null or invalid.
DI_ED_SPR	The Shipping Program ID is not a valid shipping program.
DI_ED_SPUI	The Shipping Purpose is null or invalid.
DI_ED_HCN	The Handling Code is null.
DI_ED_INVHC	The entered Handling Code is not valid.

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<b>Error Code</b>	<b>Error Description</b>
DI_ED_TCN	The Type Code is null or invalid.
DI_ED_INVTC	The handling code for the container type code does not match the handling code provided for the container.
DI_ED_TCE	The Type Code is expired.
DI_ED_CERN	The Certification Program ID is null or invalid.
DI_ED_CERI	The Certification Program ID is not in the reference tables or is expired.
DI_ED_NCER	The Certification Program ID is not a valid certifying program.
DI_ED_WSCP	The recorded Certification Program ID is not listed in the reference tables for the waste stream profile.
DI_EPA_RMI	The reported mass for one or more radionuclides is not within the allowable % difference of the calculated mass based on reported activity.
DI_EPA_TAA	The reported TRU Alpha Activity is not within the allowable % difference of the calculated value based on reported nuclide activities.
DI_EPA_TAAC	The reported TRU Alpha Activity Concentration is not within the allowable % difference of the calculated value based on reported nuclide activities.
DI_PCB_CGF	The recorded PCB concentration should be <50 ppm for non-PCB Waste.
DI_PCB_CLF	The recorded PCB concentration should be $\geq$ 50 ppm for PCB Waste.
DI_PCB_CLZ	The recorded PCB concentration is less than 0.
DI_PCB_FII	The PCB presence indicator must be Y or N.
DI_PCB_FIN	The PCB presence indicator is null.
DI_PCB_MGW	The PCB mass is > the weight of the waste.
DI_PCB_MLZ	The PCB mass is <0.
DI_PCB_MMM	The PCB mass should not be recorded if PCB Waste = N.
DI_PCB OSDI	The recorded PCB removal from service date is invalid - before 1/1/1970 or after the evaluation date.
DI_PERC_FGE	The calculated FGE based on the reported radionuclide masses is not within the allowable % of the reported container FGE.

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Appendix D – List of Error Codes and Error Descriptions

<b>Error Code</b>	<b>Error Description</b>
DI_PERC_MPW	The total material parameter weight is not within the allowable % of the container gross weight.
DI_PERC_SPW	The steel packaging material parameter weight is not within the allowable % of the container type tare weight.
DI_CHARZ_GEN	The Generator Site is null or invalid.
DI_CHARZ_GREF	The Generator Site is not in the reference tables or is expired.
DI_CHARZ_GNA	The site program provided is not an authorized Generator Site.
DI_CHARZ_LEI	The Liner Exists value must be Y or N.
DI_CHARZ_LHN	Liner hole size should not be specified if the lid is not present.
DI_CHARZ_LHP	The liner hole size must be $\geq 7.6$
DI_CHARZ_LPN	The rigid liner properties - liner hole size and the 'no lid' flag must not be marked when a liner is not present.
DI_CHARZ_MPI	One or more material parameters are null or invalid.
DI_CHARZ_MPRI	One or more material parameter records are incomplete.
DI_CHARZ_MPW	One or more material parameters have a negative material parameter weight.
DI_CHARZ_WSPF	The waste stream profile has not been provided.
DI_CHARZ_NDE	At least one set of NDE method data must be provided.
DI_CHARZ_NDEI	One or more provided NDE method records are incomplete, or are not an NDE type method.
DI_CHARZ_NDES	One or more provided NDE method records are not approved for use with the characterization program.
DI_CHARZ_NDED	One or more provided NDE method records were not approved for use on the provided characterization date.
DI_CHARZ_NDEB	One or more provided NDE method records have a reported characterization method date before 1/1/1970 or after the current date.
DI_CHARZ_NDECP	One or more provided NDE method records have a characterization program ID that is not an approved characterization program.
DI_CHARZ_SAMD	One or more provided sample records have a sample date before 1/1/1970 or after the current date.

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Appendix D – List of Error Codes and Error Descriptions

<b>Error Code</b>	<b>Error Description</b>
DI_CHARZ_SAMPC	One or more provided sample records have a characterization program ID that is not an authorized characterization program.
DI_CHARZ_SRP	One or more sample and/or analyte records are incomplete.
DI_CHARZ_AND	One or more provided sample amount records have an analysis date before 1/1/1970 or after the current date.
DI_CHARZ_ADBS	One or more provided sample amount records have an analysis date before the sample date.
DI_CHARZ_AOR	One or more provided sample amount records have a concentration out of range (between 0 and 1000000).
DI_CHARZ_CAS	One or more provided sample amount records have an invalid CAS number.
DI_CHARZ_ADU	One or more provided sample amount records have an analysis date that does not fall within an approved date range for the method.
DI_CHARZ_HAZ	Hazardous codes can only be reported for waste streams that are MTRU.
DI_TRAMPAC_CHO	One or more inner cans have a hydrogen concentration that is $\leq 0$ or $> 10^6$ .
DI_TRAMPAC_CCI	The content code is not listed in the reference tables.
DI_TRAMPAC_CCN	The content code is null.
DI_TRAMPAC_CDI	The Closure Date is invalid.
DI_TRAMPAC_CDN	The Closure Date is null.
DI_TRAMPAC_CNU	One or more inner can numbers are non-unique for the certification program.
DI_TRAMPAC_COR	The following analytes have null concentrations that are <u><math>\leq 0</math> or <math>&gt; 100000</math></u> .
DI_TRAMPAC_GWN	The Gross Weight is null.
DI_TRAMPAC_GWUN	The Gross Weight Uncertainty is null.
DI_TRAMPAC_NFIL	The quantity of filters reported must be $\geq 1$ for at least one filter record.
DI_TRAMPAC_TCN	The TRUCON Code is not populated.
DI_TRAMPAC_SCN	The Shipping Category is not populated.
DI_TRAMPAC_SDN	Sample [Sample #] has a null sample date.

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Appendix D – List of Error Codes and Error Descriptions

DI_TRAMPAC_TCI	The TRUCON Code is not in the reference table.
DI_TRAMPAC_SCI	The provided Shipping Category is not valid for the reported TRUCON Code.
<b>Error Code</b>	<b>Error Description</b>
DI_TRAMPAC_PKI	The Process Knowledge flag must be Y or N.
DI_TRAMPAC_AQI	The Aqueous Material flag must be Y, N, or null.
DI_TRAMPAC_VDN	The Vent Date is null.
DI_TRAMPAC_VDI	The Vent Date is invalid.
DI_TRAMPAC_TFI	There is an error with the Truncated FGGR test values.
DI_TRAMPAC_GGT	If gas generation testing was performed, non-null values must be recorded for both FGGR and TGRR.
DI_TRAMPAC_DHN	The Decay Heat is null.
DI_TRAMPAC_DHUN	The Decay Heat Uncertainty is null.
DI_TRAMPAC_FIL	One or more filters must be reported.
DI_TRAMPAC_DHI	The reported decay heat is not within the calculated decay heat based on the radionuclide masses.
SHIP_ALL_APP	An unexpected error caused the evaluation to end prematurely.
SHIP_PRE_COM	Comments are required if the Shipment Limited Due To flag - Other is checked.
SHIP_PRE_COMF	Comments are required if more than one Shipment Limited Due To flag is checked.
SHIP_PRE_IPT	The shipment contains incompatible package types.
SHIP_PRE_NEP	The shipment must have one or more assigned payloads.
SHIP_PRE_SLF	At least one Shipment Limited Due To flag must be checked if the number of payloads assigned to the shipment is less than the maximum number listed in the reference tables.
SHIP_PRE_SLFD	At least one Shipment Limited Due To flag must be checked if the shipment contains dunnage.
SHIP_PRE_SNN	The shipment number is not recorded.
SHIP_PRE_TMP	The number of payloads assigned to the shipment is > the maximum number of payloads allowed for the packaging type



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Appendix D – List of Error Codes and Error Descriptions

SHIP_FINAL_ASL	The Alpha Surface Contamination exceeds the limit for one or more payloads associated with the shipment.
SHIP_FINAL_ASN	The Alpha Surface Contamination has not been provided for one or more payloads associated with the shipment.
<b>Error Code</b>	<b>Error Description</b>
SHIP_FINAL_BSL	The Beta/Gamma Surface Contamination exceeds the limit for one or more payloads associated with the shipment.
SHIP_FINAL_ASN	The Beta/Gamma Surface Contamination has not been provided for one or more payloads associated with the shipment.
SHIP_FINAL_DOT	The DOT Description has not been provided for one or more payloads associated with the shipment.
SHIP_FINAL_DR1	The Dose Rate 1m has not been provided for one or more payloads associated with the shipment.
SHIP_FINAL_DR2	The Dose Rate 2m has not been provided for one or more payloads associated with the shipment.
SHIP_FINAL_DRC	The Dose Rate - Contact has not been provided for one or more payloads associated with the shipment.
SHIP_FINAL_HRCQ	The HRCQ has not been provided for one or more payloads associated with the shipment.
SHIP_FINAL_ICV	The ICV Closure Date has not been provided for one or more payloads associated with the shipment.
SHIP_FINAL_MTRU	The manifest must be recorded if the shipment contains one or more MTRU containers.
SHIP_FINAL_OCA	The OCA Lid Number has not been provided for one or more payloads associated with the shipment.
SHIP_FINAL_PNN	The package number has not been provided for one or more payloads associated with the shipment.
SHIP_FINAL_RQ	The RQ has not been provided for one or more payloads associated with the shipment.
SHIP_FINAL_SDN	The send date is null.
SHIP_FINAL_TNN	The transporter name is null or invalid.
SHIP_FINAL_TRL	The trailer ID is null or invalid.
SHIP_FINAL_TRN	The tractor ID is null or invalid.
SHIP_DI_ASC	The Alpha Surface Contamination is negative for one or more payloads.
SHIP_DI_BSC	The Beta/Gamma Surface Contamination is negative for one or more payloads.

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Appendix D – List of Error Codes and Error Descriptions

SHIP_DI_CDR	The Contact Dose Rate is negative for one or more payloads.
SHIP_DI_DR1	The 1m Dose Rate is negative for one or more payloads.
SHIP_DI_DR2	The 2m Dose Rate is negative for one or more payloads.

**Error Code**

**Error Description**

SHIP_DI_ICVA	The ICV Closure Date is after the evaluation date for one or more payloads.
SHIP_DI_ICVB	The ICV Closure Date is before 1/1/1970 for one or more payloads.
SHIP_DI_PKG	One or more payloads have null or invalid package numbers.
SHIP_DI_PKU	One or more payloads have package numbers that have already been used in the shipment.
SHIP_DI_SEND	The send date is not within 5 days of the evaluation date.
SHIP_DI_SVN	The shipment number and/or shipping program are null.
SHIP_DI_TRC	The tractor is null or invalid.
SHIP_DI_TRL	The trailer is null or invalid.
SHIP_DI_TRP	The transporter is null or invalid.
SHIP_DI_UNQ	The shipment number is not unique for the shipping program.

**APPENDIX E - DETAILS FOR THE SHIPPER/GENERATOR DASHBOARD  
FUNCTIONS**

## Appendix E – Details for the Shipper/Generator Dashboard Functions

The WDS will allow users to upload container data, plan and create payloads using uploaded containers, and plan and create shipments using approved payloads. Access to the shipment data entry function is restricted to the Shipper/Generator user group. The shipper generator user can create a new shipment record or edit an existing shipment record. Options are provided to allow the user to indicate the inclusion of dunnage in a shipment due to Weight limitation, FGE limitation, Gas Generation limitation, or other limitation.

The user can associate one or more payloads with a shipment in the New Shipment (NEW\_SHIP) status. The user can delete payloads, and all associated packaging data, from the active shipment record if the shipment has a (NEW\_SHIP) status. The WDS automatically populates the shipment Governing Shipping Period field with the minimum governing shipping period for the payloads associated with the shipment. Visual attributes are provided to enable users to distinguish containers (and their associated assemblies and/or payloads if applicable) in Pending Certification Data Approval status from those in Certification Data Approved status within the shipment data entry function.

The WDS automatically populates the Handling Material Weight field with the Handling Material Weight specified in the Packaging/Container Types reference table for the given packaging and container type of the payload as the default value. ICV/IV Closure Date must include the time of closure. The WDS automatically provides a candidate list of payloads, where the selection criteria include all completed payloads saved to the database with the Shipping Program ID, Current Location, and Destination Site ID of the active shipment that have not been assigned to a shipment. As payloads are added to the shipment, the WDS limits the list of payload candidates to payloads of the same handling code of the payloads already assigned to the shipment. For each candidate payload, the WDS displays the payload governing shipping period and PCB indicator flag.

The WDS calculates and display the following total fields for the payloads associated with the active shipment: Package Weight, Payload Weight and Error (kg), FGE and 2 x Error, Decay Heat & Error (W), and Pu-239 Equivalent Curies (PE-Ci). For each total shipment error field, the WDS automatically calculates the total as the RSS of the payload errors.

The user has access to the payload data (via the Payload Data Report) for each payload associated with the active shipment. The user can save the shipment record without submitting the record. The WDS enables the save function if a unique shipment number has been entered. Upon successful save of a shipment that has not previously been saved, the WDS sets the shipment record to New Shipment status and records the insertion into the database in the shipment status history table. The overall shipment status is displayed (i.e., New, In Review, Complete, En Route, or Received). The overall shipment status is displayed with respect to the following three subcomponents of the shipment status: confirmed status, DA review status, and shipment data finalized status. When the shipment is submitted to the review process, the WDS executes the preliminary shipment edit/limit check evaluation. If the shipment

## Appendix E – Details for the Shipper/Generator Dashboard Functions

passes the preliminary shipment edit/limit check evaluation, the WDS automatically sets the shipment status to En Review, records the status change in the shipment status history table, sends an email to the Confirmation Team distribution list stating that the shipment is ready for confirmation review (WIPP destination site only), and sends an email to the Data Administrator Team distribution list stating that the shipment is ready for DA review (WIPP destination site only). If the shipment fails the preliminary shipment edit/limit check evaluation, the WDS provides access to the detailed results for the shipment edit/limit check evaluation. The user can submit the active shipment to the final shipment edit/limit check evaluation if the shipment data has not already been finalized. The WDS updates the shipment data finalized status to TRUE and records the shipment finalization in the shipment status history table if the shipment passes the final shipment edit/limit check evaluation. If the shipment fails the final shipment edit/limit check evaluation, the user is provided access to the detailed results for the shipment edit/limit check evaluation.

All shipment data, with the exception of Send Date, is protected from update for a shipment record with shipment data finalized status = TRUE. The user can update a shipment in Complete (COMPLETE\_SHIP) status to En Route status and record the change in status in the shipment status history table. All shipment data, including the Send Date, is protected from update for a shipment with an En Route status. The applicable errors from the most recent shipment edit/limit check evaluation are displayed. The user can delete shipment records in New Shipment status or shipment records in In-Review status that are not confirmed and not DA approved. The WDS automatically clears all payload associations to the shipment when a shipment is deleted. The user can reset the shipment status to New Shipment for the active shipment and the WDS will automatically record the reset in the shipment status history table if it is in "In Review" status and has not been confirmed. The WDS automatically removes the DA approval, if the shipment has DA approval and an email is sent to the confirmation team distribution list stating that the shipment is no longer available for confirmation review (WIPP destination site only).

The user can set the shipment data finalized status to FALSE if the shipment is in a status prior to En Route status. When the shipment data finalized status is set to FALSE, the WDS updates the shipment status to In Review and records the status change in the shipment status history table.

The user has access the PATCD reports for one or more TRUPACT or HalfPACT payloads assigned to the active shipment. The user has access the PTCD report for one or more RH 72-B payloads assigned to the active shipment. The user can access the PCTCD/OPCTCD report for all payload containers assigned to the active shipment and for all payload containers and associated inner containers (as applicable) assigned to the highlighted payload. The user can access the Shipment Summary report for the displayed shipment

## Appendix E – Details for the Shipper/Generator Dashboard Functions

### **E.1 Waste Stream Approval Process - Container Characterization Data Submittal**

This section describes the process for entering container characterization data into the WDS for the waste stream profile technical review.

#### Containers in Certification Pre-submittal Status

The Shipper Generator dashboard provides a containers in presubmittal certification status query function that outputs to a csv file the certification program ID, waste stream profile ID, container number, container type code, container record insert date, sample ID, and sample record insert date for waste containers (includes to-be-overpacked containers) in presubmittal certification status that have a waste stream profile ID assigned. Functionality will allow the user to filter on one or more of the following criteria: certification program ID, waste stream profile ID, and sample ID using wild cards.

#### Containers Certification Approved – Not Yet Shipped

The Shipper Generator dashboard provides a certified containers not shipped query function that outputs to a csv file the certification program ID, waste stream profile ID, container number, container type code, certification date, and latest approval date for waste containers (includes to-be-overpacked containers) in approved certification status that have not been shipped. Functionality will allow the user to filter on one or more of the following criteria: certification program ID and waste stream profile ID.

#### Containers Certification Approved – Assigned to Shipment

The Shipper Generator dashboard provides a containers assigned to shipment query function that outputs to a csv file the shipping program ID, shipment send date, shipment number, packaging number, overpack number (if applicable), container type code, container number, certification date, waste stream profile ID, IDC code with concatenated generator site prefix (e.g., RF001), and assembly ID for waste containers (does not include overpacks) assigned to a shipment. Functionality will allow the user to filter on one or more of the following criteria: shipping program ID, waste stream profile ID, shipment number using wild cards, and shipment send date range.

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### Appendix E – Details for the Shipper/Generator Dashboard Functions

**Figure E-15-A. Shipper/Generator Dashboard Functions**

**WDS WASTE DATA SYSTEM**

STRUM, MIKE  
4/30/2009 15:13 PM

HELP  
LOG OUT

DASHBOARD ACTION CENTER AD-HOC QUERY

Dashboard Shipper Generator Dashboard

**FUNCTIONS**

- Container Characterization Data Submittal
- Container Certification Data Submittal
- Canister Planning & Completion
- Overpack Planning & Completion
- Payload Planning & Completion
- Shipment Data Entry
- Data Upload Function
- Dunnage Container Data Entry
- Intersite Shipment Receipt

**REPORTS**

- Container Certification Approval/Rejection Report
- Containers with Conditional Status List
- Shipment Summary Report
- Reference Table Reports

Characterization	
Pre-submittal	11
Pending	38
Holding	0
Approved	17

Certification	
Pre-submittal	1379
Pending	40
Holding	2
Approved	173227

Overpack Candidates

Canister Candidates

Payload Candidates

Shipment Candidates

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### Appendix E – Details for the Shipper/Generator Dashboard Functions

**Figure E-2. Container Characterization Data Submittal**

The screenshot shows the 'WDS WASTE DATA SYSTEM' interface. At the top right, it displays the user 'STRUM, MIKE' and a 'LOG OUT' button, along with the date '9/20/2009 16:07'. Below the header, there are tabs for 'DASHBOARD' and 'AD-HOC QUERY'. The main section is titled 'CONTAINER CHARACTERIZATION DATA SUBMITTAL' and includes buttons for 'NEW CONTAINER', 'COPY & CREATE', 'SAVE', 'DELETE', and 'SUBMIT'. A search bar is located at the top right of the form area.

**General Information**

Container Number: [Text Field]  
Waste Handling Code: [Dropdown]  
Current Location Site: [Dropdown]  
Generator Site: [Dropdown]  
Cert Program ID: [Dropdown]

Container Type: [Dropdown]  
Waste Stream Profile: [Dropdown]  
Waste Type Code: [Dropdown]  
Waste Matrix Code: [Dropdown]  
IDC Code: [Text Field]  
BIR ID: [Text Field]  
MVR ID: [Text Field]

Layers of Packaging: [Text Field]  
Liner Exists: [Dropdown]  
Liner Lid Present: [Dropdown]  
Liner Hole Size (mm): [Text Field]

**Evaluations**

☐ Data Integrity [View Latest Results](#)  
☐ WAP [Execute Checks](#)

**Gas Or Solid Samples**

**Add Sample**

Sample ID	Labor Code	Sample Type	Sample Date	Layer sampled	Unique Sample
[Text Field]	[Dropdown]	[Dropdown]	[Text Field]	[Dropdown]	<input type="button" value="ADD"/>

**Material Parameters**

Material Parameter	Description	Weight (kg)
[Dropdown]		[Text Field]

**Hazardous Codes**

Available Hazardous Codes	Assigned Hazardous Codes
D004 - ARSENIC D005 - BARIUM D006 - CADMIUM D007 - CHROMIUM D008 - LEAD D009 - MERCURY D010 - SELENIUM D011 - SILVER D018 - BENZENE D019 - CARBON TETRACHLORIDE D021 - CHLOROBENZENE D022 - CHLOROFORM D026 - CRESOL D027 - 1,4-DICHLOROBENZENE D028 - 1,2-DICHLOROETHANE D029 - 1,1-DICHLOROETHYLENE D030 - 2,4-DINITROTOLUENE D032 - HEXACHLOROBENZENE D033 - HEXACHLOROBUTADIENE D034 - HEXACHLOROETHANE	<div>&gt;&gt;&lt;&lt;</div>

**Non-Destructive Examination (NDE)**

NDE Method	Examination Date	Labor Code
[Dropdown]	[Text Field]	[Dropdown]

Access to all characterization data entry and submittal functions is restricted to the Shipper/Generator user group. The following data values are used for container characterization:

- Container Number
- Container Type



## Appendix E – Details for the Shipper/Generator Dashboard Functions

- Select Waste Handling Code from the dropdown menu
- Select the Current Location Site ID from the dropdown menu
- Select the Generator Site ID from the dropdown menu
- Select the Certification Program ID from the dropdown menu
- Select the Waste Stream Profile number from the dropdown menu
- IDC Code
- Select Waste Matrix Code from the dropdown menu
- Waste Stream BIR ID
- Waste Stream MWIR ID
- Liner Exists Flag (Select Yes or No)
- Liner Lid Present (Select Yes or No)
- Liner Hole Size (mm)
- Layers of Packaging

The user can input the following data values for each gas or solid sample associated with the container:

- Sample ID
- Select Sample Type from the dropdown menu
- Sample Date
- Layer Sampled (0 = Container Headspace, 1 = Rigid Liner, 2 = Pipe Component Headspace)

---

### **NOTE**

The Labor Code associated with the sample (e.g., the sample's Site ID) may be manually populated or changed using the selection criteria from the dropdown menu if a different identifier is required.

---

The user can select from the following analysis data values for each unique sample associated with the container:

- Select the Chemical Abstract Service Number from a List of Values
- Concentration (ppm)
- Analysis Date
- Select the Analysis Method from a dropdown menu
- Select applicable Reporting Flags (J, B, D, E, U, N/A)

The user can input the following data values for each material parameter associated with the container:

- Material Parameter
- Weight (kg)

The user can input the hazardous codes associated with the container by selecting the correct codes that need to be applied from the list of Available Hazardous Codes and inputting them to the Assigned Hazardous Codes list.

## Appendix E – Details for the Shipper/Generator Dashboard Functions

The user can input the following data values for each nondestructive examination (NDE) associated with the container:

- Select NDE Method from the dropdown list
- Examination Date

---

### **NOTE**

The Labor Code (e.g., Characterization Methods Site ID) may be manually populated or changed using the selection criteria from the dropdown menu if a different identifier is required.

---

The user can create a new container record by copying the data contents of an existing record. This is accomplished by selecting the Copy and Create button and changing the container number.

The Waste Type Code field may be populated from a reference table lookup or dropdown menu based on the container's Waste Stream Profile Code value.

The Certification Program ID will be populated and displayed if the user is authorized for the site.

The WDS enforces the following selection and data entry value restrictions based on database reference tables:

- The Waste Stream Profile Code list shall be based on the entered Certification Program ID.
- The Waste Matrix Code shall be based on the entered waste stream profile.

The user can query, display, and edit previously saved container characterization data for all containers with a characterization pre-submittal status. The user can save the displayed data.

The WDS will automatically verify the container number being saved is unique in the system. In the event of a duplicate container number, the WDS will display a message indicating the presence of the duplicate container along with the current container status, and the new container data will not be saved. Upon successful save of characterization data, the associated container record to characterization is set to pre-submittal status and the insertion is recorded into the database in the container status history table.

The user can delete the complete characterization data record set for the displayed container, if the container is in characterization pre-submittal status.

The WDS automatically evaluates the characterization data for the displayed container against the container characterization WAP edit/limit checks and the container characterization data integrity edit/limit checks. Upon completion of edit/limit check

## Appendix E – Details for the Shipper/Generator Dashboard Functions

evaluations, the pass/fail evaluation status of the container and failure details if applicable will be displayed.

The user can submit one or more containers for DA approval of the containers' characterization data. Upon submission of a container for DA approval, the WDS automatically evaluates the container data against the container characterization edit/limit checks. In the event of an edit/limit check failure, the user is notified of the failure and can view all evaluation failure details.

- If the container was not previously saved, the database automatically saves the container characterization data, sets the container record status to characterization pre-submittal, and records the insertion into the database container status history table.
- If the container was saved previously, the user can update the container data and the WDS will maintain the container record in a characterization pre-submittal status.

Upon successful submittal of a container for DA approval, WDS automatically performs the following functions:

- If the container was not previously saved, the container characterization data are saved, the container record status is set to characterization pending approval status, and both the insertion into the database and the successful submittal in the container status are recorded in the history table.
- If the container was previously saved, the container is updated to a characterization pending approval status and the successful submittal is recorded in the container status history table.

If the container is in a characterization pending approval status, data modification is not allowed.

---

### **NOTE**

To change or update data for a container in pending approval status, the user submits a request to the DA. The data is automatically reset to pre-submittal status and the user makes the necessary changes and resubmits the data for approval.

---

## Appendix E – Details for the Shipper/Generator Dashboard Functions

### E.2 Container Certification Data Submittal

**Figure E-3. Container Certification Data Submittal**

**WDS WASTE DATA SYSTEM** STRUMWIKS LOG OUT  
 9/20/2009 12:12

**DASHBOARD RD AD-HOC QUERY** Container SEARCH

**CONTAINER CERTIFICATION DATA SUBMITTAL** NEW CONTAINER COPY & CREATE SAVE DELETE SUBMIT FOR APPROVAL

**Search**

**Evaluations**

☐ WAP ☐ WAC [View Latest Results](#)  
☐ CSA ☐ Data Integrity [Schedule Checks](#)  
☐ TRANSPAC

**Container Information**

Container Number  Waste Handling Code   
 Container Type

**Current Location Site**

Current Location Site  Neutron Dose Rate (mrem/hr)  Decay Heat (W)   
 Generator Site  Beta Gamma Dose Rate (mrem/hr)  Decay Heat Uncert (W)   
 Destination Site  Gross Weight (kg)  P/G (g)   
 Shipping Program ID  Gross Weight Uncert (kg)  P/G Uncert (g)   
 Cert Program ID   
 Waste Weight (kg)  Packaging Weight (kg)  Total Material Weight (kg)

**Certification Data Values**

Waste Stream Profile Code   
 Waste Type Code   
 ISC Code   
 Waste Matrix Code   
 Waste Stream SRI ID   
 Waste Stream SRI ID   
 WAC Revision Number   
 Fill Fraction (%)   
 IRI Alpha Activity (Ci)   
 IRI Alpha Activity Uncert (Ci)   
 IRI Alpha Activity Concen (Ci/g)   
 Pu-239 Equivalent Activity (Ci/g)   
 Alpha Surface Concen (dpm/cm<sup>2</sup>)   
 Beta Gamma Surface Concen (dpm/cm<sup>2</sup>)   
 PCB Waste   
 PCB Mass (kg)   
 PCB Concentration (ppm)   
 PCB Out of Service Date   
 Seal Present   
 Seal T50 Weight   
 Seal Mass <100g   
 Separation OK   
 Packing Fraction (compaction level)

**Transportation Data Values**

Liner Lid Present   
 Liner Isolate   
 Liner Hole Size (mm)   
 Layers of Packaging   
 Certification Date   
 Closure Date   
 Vent Date   
 Process Knowledge   
 Shipment Purpose   
 Machine Compacted   
 Aqueous Material

**Class Generation Testing**

Measured FGSR	Measured TGSR	Truncated FGSR Test Indicator	Truncated FGSR Test Period
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

**Certification Comments**

**Radionuclide**

**Priority**

**Sample**

**Material Parameters**

**Hazardous Codes**

**Non-Destructive Examination (NDE)**

**Assay**

**Dashboard | User Preferences** NIST/DOE WDS v1.0.0 certbadm.exe  
 BUILD: 10/24/2009 09:14

## Appendix E – Details for the Shipper/Generator Dashboard Functions

Access to all certification data entry and submittal functions is restricted to the Shipper/Generator user group.

The user may input the following certification data values for a container:

- Container Number
- Container Type
- Select Waste Handling Code from the dropdown menu
- Select Current Location Site from the dropdown menu
- Select Generator Site from the dropdown menu
- Select Destination Site from the dropdown menu
- Select Certification Program ID from the dropdown menu
- Select Shipping Program ID from the dropdown menu
- Shipment Purpose (Characterization, Certification, Treatment, Disposal)
- Gross Weight (kg)
- Gross Weight Uncertainty (kg)
- Liner Exists Flag – Select Yes/No from the dropdown menu
- Liner Lid Present – Select Yes/No from the dropdown menu
- Liner Hole Size (mm)
- Layers of Confinement

For CH waste, the CHTES needs to know whether or not the waste container has a rigid liner and, if so, the nominal diameter of the liner's puncture. For RH waste, the RHTES needs to know whether or not the waste container has a rigid liner and, if so, the nominal diameter of the liner's puncture. The Liner Exists field, which is required to pass the certification edit/limit checks, has two allowable values: Y or N. If LINER\_EXISTS = Y and LINER\_LID\_PRESENT = Y, the Liner Hole Size field will be enabled with a default value of 7.62 millimeters (0.3 inches). If the rigid liner's puncture diameter is known to be greater than 7.62 millimeters, the value may be adjusted accordingly. If not, it will be left with the more conservative value. If LINER\_EXISTS is "N," LINER\_HOLE\_SIZE must be null.

- Neutron Dose Rate (mrem/hr)
- Beta Gamma Dose Rate (mrem/hr)
- Fissile Gram Equivalent (FGE) (g)
- FGE Uncertainty (g)
- Decay Heat (W)
- Decay Heat Uncertainty (W)
- Machine Compacted Flag – Select Yes/No from the dropdown menu
- Separation OK Flag – Select Yes/No from the dropdown menu
- Aqueous Material Flag – Select Yes/No from the dropdown menu
- Certification Date
- Waste Generation Date (RH only)
- Waste Stream Profile Code
- IDC Code
- Waste Matrix Code

## Appendix E – Details for the Shipper/Generator Dashboard Functions

- WAC Revision Number
- Waste Stream BIR ID
- Waste Stream MWIR ID
- TRU Alpha Activity (Ci)

When container data are submitted to the WDS, the database performs an automated edit/limit check to compare the reported TRU Alpha Activity (TAA) with the calculated TAA and returns an error if the percent difference is greater than the established data integrity limit (currently 5%). The calculated TAA is defined as the sum of the reported alpha activity of the TRU radionuclides. The percent difference is calculated as the absolute value of the difference between the reported value and the calculated value divided by the calculated value times 100. If the calculated TAA does not agree with the data from the batch data report, data entry spreadsheet, or site database, the user has the opportunity to investigate the problem and make corrections before attempting to submit or transmit the container data to the WDS.

- TRU Alpha Activity Uncertainty (Ci)
- TRU Alpha Activity Concentration (Ci/g)

When container data are submitted to the WDS, the database performs an automated edit/limit check to compare the reported TRU Alpha Activity Concentration (TAAC) with the calculated TAAC and returns an error if the percent difference is greater than the established data integrity limit (currently 5%). The calculated TAAC used in the comparison is defined as the sum of the reported activity of the TRU radionuclides divided by 1,000 times the waste weight. The waste weight is defined as the sum of the weights in kg of the material parameters that are designated as waste. The percent difference is calculated as the absolute value of the difference between the reported value and the calculated value divided by the calculated value times 100.

- Pu-239 Equivalent Activity (PE-Ci)
- Alpha Surface Contamination (dpm/cm<sup>2</sup>) (disintegrations per minute over a squared centimeter)
- Beta/Gamma Surface Contamination (dpm/cm<sup>2</sup>)
- U-235 Fissile Equivalent Mass (FEM) (g) (RH 72B only)
- U-235 FEM Uncertainty (g)
- Fill Factor (%)
- PCB Waste Flag – Select Yes/No from the dropdown menu
- PCB Mass (kg)
- PCB Concentration (ppm)

## Appendix E – Details for the Shipper/Generator Dashboard Functions

- PCB Out of Service Date

The Waste Containers Table contains a checkbox labeled PCB Waste, which is checked to indicate the presence of PCBs in the waste container. The PCB Mass (kg) field is to be used to indicate the weight in kgs of the PCB waste. The PCB Out of Service Date field is used to identify the date the PCBs within the waste container were removed for disposal. The WIPP WAC defines the date of removal from service for disposal as the earliest date of waste generation. If the PCB Waste checkbox is checked, a date must be entered into the PCB Out of Service Date field and a value must be entered in the PCB mass (kg) field. If the user checks the PCB Waste checkbox but does not enter a PCB Out of Service Date or a value in the PCB mass (kg) field, the user receives an error message when attempting to submit the container data to the WDS. Conversely, if a date is entered in the PCB Out of Service Date field and the PCB Waste checkbox is unchecked, the user receives an error message when attempting to submit the container data to the WDS. The PCB concentration (ppm) field is optional (range 0 to 999999.999). The PCB mass (when required) must be  $>0$  and  $\leq$  the weight of the waste in the container.

To achieve consistency in reporting among all sites, PCB concentrations in waste containers that are known to contain PCB-contaminated nonliquid material and PCB articles are reported in accordance with instructions provided in the WIPP WAC and any supplemental guidance provided in the WIPP WAC. The WIPP WAC includes a requirement for generators to report a description of the type of PCB waste. The WDS does not have a specific data field to enable sites to meet this requirement; however, the PCB waste description may be reported using the COMMENTS form.

- Be (beryllium) Present Flag – Select Yes/No from the dropdown menu
- Be  $\leq 1\%$  by weight – Select Yes/No from the dropdown menu
- Be mass  $\leq 00\text{kg}$  Flag – Select Yes/No from the dropdown menu
- TRUCON Code (CH only)
- Content Code (RH only)
- Shipping Category (CH only)
- Closure Date
- Vent Date
- Process Knowledge Flag – Select Yes/No from the dropdown menu
- Aspiration Method (CH only)

The user inputs the following data values for each radionuclide associated with the container:

- Radionuclide
- Activity (Ci)
- Activity Uncertainty (Ci)
- Mass (g)
- Mass Uncertainty (g)

## Appendix E – Details for the Shipper/Generator Dashboard Functions

The WIPP WAC requires that the activities and masses of Am-241, Pu-238, Pu-239, Pu-240, Pu-242, U-233, U-234, U-238, Sr-90, and Cs-137 shall be established on a payload container basis for purposes of tracking their contributions to the total WIPP radionuclide inventory. These radionuclides represent the primary sources of all activity for waste emplaced at WIPP. The estimated activities and masses, including their associated total measurement uncertainties (TMU) expressed in terms of one standard deviation for these ten radionuclides, shall be reported to the WDS on a payload container basis. The WDS has a built-in edit/limit check to ensure that these radionuclides are reported for each waste container when submitted to the database for WIPP approval.

For any of these ten radionuclides whose presence can be substantiated from AK, direct measurement, computations, or a combination thereof, and whose measured data are determined to be below the lower limit of detection (LLD) for that radionuclide, the site shall report the character string <LLD to the WDS for the activity and mass of that radionuclide; otherwise, a value of zero shall be reported. Refer to the WIPP WAC for requirements prohibiting use of quantitative estimates for LLD in calculating related radiological properties of the waste such as TRU Alpha Activity Concentration. Do not report quantitative LLD estimates to the WDS.

For all radionuclides reported to the WDS, methodology for the sites to report <LLD has been developed. Sites using electronic data entry to the WDS may use the code –1 in their database or spreadsheet to report <LLD. When –1 is manually input to the Activity or Mass field or their associated uncertainty fields, <LLD is displayed. At sites where manual data entry is used, the user who performs WDS data entry may input –1 into the activity or mass fields or their associated uncertainty fields and <LLD will be displayed. Radionuclide values reported to the WDS as <LLD are not included in WDS reports that provide data roll-ups and WIPP inventory totals.

For reporting of radionuclides, the following reporting guidelines are applicable:

- Any of the ten radionuclides whose presence cannot be substantiated from AK, direct measurement, computations, or a combination thereof, must still be reported to the WDS and the corresponding mass and activity values must be reported as 0.
- Any of the ten radionuclides whose presence can be substantiated from AK, direct measurement, computations, or a combination thereof, and whose measured data are below LLD, must still be reported to the WDS and the corresponding mass and activity values must be reported as <LLD.
- The activities and masses of radioisotopes other than the ten WIPP-tracked radionuclides that contribute to 95% of the radioactive hazard for the payload container shall also be reported to the WDS.



## Appendix E – Details for the Shipper/Generator Dashboard Functions

- If U-235 is present in the waste, the corresponding mass and activity values must be reported to the WDS for purposes of accounting for all nuclides that contribute the calculated FGE prior to shipment.

When container data are submitted to the WDS, an automated edit/limit check is performed to compare the reported mass of each radionuclide with the calculated mass, and an error is returned if the percent difference is greater than the data integrity limit (currently 5%). Calculated mass is defined as the reported activity divided by specific activity identified on the Radionuclides Reference Data report. The percent difference is calculated as the absolute value of the difference between the reported value and the calculated value divided by the calculated value times 100.

When container data are submitted to the WDS, an automated edit/limit check is performed to compare the reported FGE with the calculated FGE, and an error message is returned if the percent difference is greater than the limit established by the CBFO (currently 5%).

The user inputs the following data values for each filter associated with the container:

- Select Filter Model Number from the dropdown list
- Filter Diffusivity (automatically populated from reference table value)
- Quantity
- Install Date

The user inputs the following data values for each sample associated with the container:

- Sample ID
- Labor Code (Characterization Method ID)
- Select Sample Type from the dropdown menu
- Sample Date
- Layer Sampled (0 = Container Headspace, 1 = Rigid Liner Headspace, 2 = Pipe Component Headspace)

The user inputs the following analysis data values for each unique sample associated with the container:

- Select the CAS Number from a List of Values
- Concentration (ppm)
- Analysis Date
- Select Analysis Method from the dropdown menu
- Select applicable Reporting Flags (J, B, D, E, U, Z, N/A)

The user inputs the following data values for each material parameter associated with the container:

- Material Parameter
- Weight (kg)

## Appendix E – Details for the Shipper/Generator Dashboard Functions

In accordance with approved procedures, the user may report a different standard nominal weight for a given type of container and/or liner.

For CH waste, the waste material parameters are documented on a container basis during waste characterization activities. The estimated weight for each material parameter is then reported to the WDS.

For RH waste, the WIPP WAC requires that debris waste (S5000) shall be reported in WDS as plastic using the volume of the waste container multiplied by  $620 \text{ kg/m}^3$ , up to the net weight of the waste.

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### **NOTE**

The WDS does not automatically perform this conversion. The site must perform the conversion prior to submitting the container data to the database. Waste weight values above the derived value shall be reported as material parameter type appropriate for the waste physical form.

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Soils and gravel (S4000) shall be reported to WDS as the net weight of the waste with the waste material parameter type of Soil (Material Parameter #12).

Homogeneous Solids (S3000) shall be reported to the WDS as the net weight of the waste with the waste material parameter type appropriate to the waste.

Debris waste that is included in containers of S3000 or S4000 waste shall be reported as plastic (Material Parameter #8) with an estimated weight.

Plastic packaging is required to be reported to the WDS as packaging (Material Parameter #14).

The material parameter weights are reported in kg and are automatically checked, as follows:

- The sum of the entered weights of the waste material parameters plus the entered weights of the steel packaging materials (parameter 13), plastic packaging materials (parameter 14), and cellulosic packaging materials (parameter 15) must equal the entered gross weight of the waste container, plus or minus 5%. This 5% tolerance may be adjusted to accommodate successful transfer of container data on a case-by-case basis.
- The database performs an automated comparison between the entered weights of the steel packaging materials and the tare weight from the reference table for the specified container type. This comparison has a tolerance of 50% and is intended primarily to catch gross typographical errors such as incorrectly placed decimal points, etc. This tolerance may be adjusted when the drum tare weight does not fall within the established range. To request an adjustment in the

## Appendix E – Details for the Shipper/Generator Dashboard Functions

tolerance, the user sends an e-mail message to the DA including justification for changing the tolerance.

The user can input the hazardous codes associated with a container by selecting the correct codes from the list of Available Hazardous Codes and inputting them to the Assigned Hazardous Codes list.

The user can input the following data values for each assay associated with the container:

- Select Assay Method from the dropdown menu
- Assay Date
- Labor Code (Assay Method Site ID)

The WDS allows the user to input the following data values for each NDE associated with the container:

- Select NDE Method from the dropdown menu
- Examination Date
- Labor Code (Characterization Method Site ID)

The user can input a comment for the container to the Comment Field.

The WDS calculates the following data values for each gas-generation test associated with the container:

- Measured flammable gas generation rate (FGGR)
- Measured total gas generation release rate (TGRR)
- Truncated FGGR Test Indicator Flag
- Truncated FGGR Test Period

The user can input the following for each container inner layer record associated with the container (applies to RH containers only):

- Inner layer ID
- Inner layer type
- Parent ID
- Decay Heat (W)
- Decay Heat Uncertainty (W)
- Closure Date
- Vent Date
- Filter Diffusivity (mol/s), as applicable
- FGGR (mol/s), as applicable
- Hydrogen Concentration (ppm), as applicable
- Sample Date, as applicable

## Appendix E – Details for the Shipper/Generator Dashboard Functions

The user may create a new container record by copying the data contents of an existing record (with the exception of RH container inner can data). The WDS populates and displays the container Waste Type Code field from a lookup table based on the container's Waste Stream Profile code and the certification program ID if the system user is authorized for only one certification program ID.

The WDS enforces the following selection and data entry value restrictions based on database reference tables:

- Only WIPP-approved Waste Stream Profile codes are available.
- The Waste Stream Profile Code dropdown list is based on the entered Certification Program ID.
- The Waste Matrix Code is based on the entered Waste Stream Profile code when WIPP is designated as destination site.
- The TRUCON Code list is based on the entered Shipping Program ID and Waste Stream Profile Code when the container destination site is WIPP, or on the entered Shipping Program ID only when the container destination site is not WIPP. The TRUCON Code dropdown list also includes approved small quantity TRUCON Codes.
- The Shipping Category Code is based on the entered TRUCON Code.

The user may populate the Liner Hole Diameter (mm) data value with a default of 7.62 if the Liner Exists data value is Yes and Liner Lid Present data value is Yes, or NULL if the Liner Exists data value is No.

The WDS will calculate and display non-editable values for Waste Weight (kg), Packaging Weight (kg), and Total Material Weight (kg) from waste material data entered for the container.

The user may query or display previously saved container data for all containers with a pre-submittal certification status, approved characterization status, or certification pending approval status. The user may edit data for containers with a pre-submittal to certification status or approved characterization status.

If a container has an approved characterization status, the WDS restricts modification of the container data to exclude permit sample related data, hazardous codes, and waste matrix code.

The user may save the displayed data if the displayed container has not previously been saved. The WDS will verify the container number being saved is unique in the system. In the event of a duplicate container number, a message is displayed indicating the presence of the duplicate container along with the current container status, and the new container data is not saved.

## Appendix E – Details for the Shipper/Generator Dashboard Functions

Upon successful save of container data for a container that has not previously been saved, the WDS sets the associated container record to certification pre-submittal status and records the insertion into the database in the container status history table.

The user may delete the complete container data record set for a container if it has a certification pre-submittal status and does not belong to an overpack or overpack plan, canister or canister plan, or payload or payload plan.

The user may execute the container certification WAP evaluation, WAC evaluation, DSA evaluation, and integrity edit/limit check evaluation for a container. Upon completion of edit/limit check evaluations, the WDS will display the pass/fail evaluation status of the container and failure details, if applicable.

The WDS will execute the appropriate TRAMPAC evaluation of a container if the container has a CH handling code or a non-overpack type code, and is not assigned a Content Code that requires Manual Transportation Check.

Upon completion of the applicable TRAMPAC evaluation, the form displays the interpreted status of the container. The WDS determines the interpreted status of the TRAMPAC CH Container Evaluation for the evaluated container as follows:

- Status = "PASS" if overall TRAMPAC CH Container Evaluation status = PASS.
- Status = "PASS with Conditions" if overall TRAMPAC CH Container Evaluation status = COND, and all sub-evaluation statuses = PASS, with the exception of the flammable gas/VOC Concentration evaluation.
- Status = "PASS with conditions" if overall TRAMPAC CH Container Evaluation status = COND and container type code is a to-be-overpacked type.
- Status = "FAIL" if overall TRAMPAC CH Container Evaluation status = FAIL
- Status = "FAIL" if overall TRAMPAC CH Container Evaluation status = COND, sub-evaluation status = COND for Weight, FGE, or Radiation Dose Rate sub-evaluations, and container type code is a direct-load type.

## Appendix E – Details for the Shipper/Generator Dashboard Functions

For RH, the WDS performs no evaluations at the container level. The WDS determines the interpreted status for the TRAMPAC RH 10-160B Container Evaluation or the TRAMPAC RH 72-B Canister Evaluation for the evaluated container as follows:

- Status = "PASS" if overall TRAMPAC evaluation status = PASS
- Status = "FAIL" if overall TRAMPAC evaluation status = FAIL

The WDS displays a container's TRAMPAC evaluation results.

The user may submit one or more containers for DA approval of container certification data by pressing the Submit button at the top of the form.

Upon submission of a container for DA approval, the WDS evaluates the container record against the certification edit/limit checks and the appropriate TRAMPAC evaluation. In the event of an edit/limit check or TRAMPAC evaluation failure (if applicable), the user is notified of the failure. The user can previously view all evaluation failure details.

Upon successful submittal of a container for DA approval, the WDS updates the container to a certification pending approval status and records the successful submittal in the container status history table.

Upon successful submittal of a container assigned a Manual Transportation Check TRUCON Code, the WDS updates the container's TRAMPAC overall evaluation status to manual and updates the container's manual transportation check status to pending.

Upon submission of a container for inter-site shipment approval, the WDS performs the container certification data integrity essential data, executes the TRAMPAC data edit/limit checks and performs the appropriate TRAMPAC evaluation.

Upon successful submittal of a container for inter-site shipment approval, the WDS updates the container to a Certification Data Approved status and records the successful submittal in the container status history table.

The user may initiate the reset certification data function for containers that have not yet been assigned to a payload (or payload plan) or an overpack assigned to a payload (or payload plan). Upon initiation of the reset certification data function, the user is required to choose one of the following reasons for reset:

- Failed Container Integrity
- Failed Flammability
- Change TRUCON Code
- Change Shipping Category
- Other (requires comment)

The WDS allows the user to cancel the initiation of the reset function.

## Appendix E – Details for the Shipper/Generator Dashboard Functions

Upon successful initiation of the reset certification data function, the WDS updates the container to certification pre-submittal status. If the container is an overpack inner container, the WDS also resets the overpack to certification pre-submittal status is recorded in the container status history table.

If the container is an overpack inner container, the WDS also records the reset of the associated overpack container to certification pre-submittal status. The WDS sends an e-mail message to the user who inserted the record and the user who reset the container. The message indicates that the container has been reset, the reason for the reset, and the identity of the database in which the container was reset. A record of the reset is created in the change log, including the reason for the reset and the container's status before the reset. If the container is an overpack inner container, the WDS also creates a record in the change log for the associated overpack container. If required, the Transportation Manual Check status is reset to NULL.

Modification of a container's data is not allowed if the container is in a Certification Pending Approval status.

The user may query previously saved container data using insert user, creation date, certification date, and wildcard on the container number.

### **E.3 Data Upload Function**

To submit container data to the WDS, the user selects the Data Upload Function icon from the Shipper/Generator dashboard. The Data Upload Function allows data to be uploaded from a site database or a Microsoft Excel spreadsheet using delimited text files. The database design or spreadsheet design must be compatible with the design of the WDS. If the database is updated or the spreadsheet template is revised, testing should be performed prior to implementation for transmittal of data to the WDS. Data submitted to the WDS should originate from the most recently approved spreadsheet version. Data from a spreadsheet must be converted to a series of .txt files prior to upload to the WDS.

After the .txt files have been created, the user opens the WDS application and selects Upload Containers from the main menu. When the user selects the Browse button, a dialog box opens, showing the .txt files that are available for upload to the WDS.

To upload data to the WDS, the user selects the files to be uploaded and selects Open in the Temp Tables dialog box. The WDS determines the content of each record in each file to be uploaded based on the record identifier in the first position of the record:

- 0 - Waste Container Data
- 1 - Filter Data
- 2 - Nuclide Data
- 3 - Material Parameter Data
- 4 - Hazardous Code Data
- 5 - Characterization Method Data

## Appendix E – Details for the Shipper/Generator Dashboard Functions

- 6 - Assay Method Data
- 7 - Sample Data
- 8 - Sample Amount Data
- 9 - Comment Data

---

### NOTE

If the user does not upload any text files and selects the Upload Containers button, an error message is displayed indicating no files are available for upload. If a previous corresponding record exists when the data are mapped, the WDS overwrites the existing data for container records that have one of the following statuses: pre-submittal characterization, pre-submittal certification; or approved characterization. The WDS will not overwrite the following data: permit sample related data, hazardous codes, and waste matrix code.

---

**Figure E-4. Upload Containers Text Files Form**

The screenshot displays the 'WDS WASTE DATA SYSTEM' interface. At the top right, the user 'STRUM, MIKE' is logged in, with the date '9/20/2009 16:16' and a 'LOG OUT' button. Below this is a navigation bar with 'DASHBOARD' and 'AD-HOC QUERY' tabs. The main content area is titled 'UPLOAD CONTAINER TEXT FILES'. It features a file upload section with a text input field and a 'Browse...' button. To the right of this is a 'Container' dropdown menu and a 'SEARCH' button. Below the file upload section are three radio buttons: 'Intersite Shipping Module' (selected), 'Characterization', and 'Certification'. There is also a checkbox for 'Perform evaluations' and an 'Upload Containers' button. At the bottom, a footer bar contains 'DASHBOARD | USER PREFERENCES' on the left and 'INSTANCE: tst03.wipp.carlsbad.nm.us BUILD: WDS\_20090918' on the right.

For container data uploaded for the first time for characterization, the WDS sets the container status to pre-submittal characterization and records the insertion in the container status history table.

For container data uploaded for the first time for certification, the WDS sets the container status to pre-submittal certification and records the insertion in the container status history table.



## Appendix E – Details for the Shipper/Generator Dashboard Functions

For container data uploaded for the first time for inter-site shipment, the WDS sets the container status to pre-submittal certification and records the insertion in the container status history table.

The WDS only permits data to be uploaded by the program/site matrix as follows:

- Characterization data: Authorized Certification program ID and current location
- Certification data: Authorized Certification program ID and current location
- Inter-site container data: Authorized Shipping Program ID and current location

The user may upload a delimited text file containing sample only data (sample and sample amount records) for a container. Uploaded records from a file containing sample only data records shall meet the following conditions:

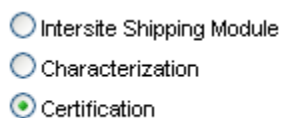
- The container referenced in the record already exists in the database.
- The container referenced in the record has a status of pre-submittal certification.

During the upload of sample only data records, the WDS overwrites previously existing sample and sample amounts records with the same sample ID as the uploaded records that are not permit-related sample records. The user has the option to perform the applicable edit/limit check evaluations upon completion of the upload of sample only data. The WDS performs the following edit/limit check evaluations when the evaluation option is selected for sample only data:

- Waste Analysis Plan (WAP) evaluation
- Data Integrity Evaluation
- Characterization Data.

After selecting the text files, the user selects the upload purpose from the submenu as shown in Figure E-5.

### Figure E-5. Upload Containers Functionality: Upload Purpose Submenu

- 
- ☐ Intersite Shipping Module
  - ☐ Characterization
  - ☒ Certification

---

#### NOTE

If a user attempts to upload container data from an approved waste stream into Characterization, the database returns an error message indicating that the waste stream is approved. The user then has the option to select the Certification button and resubmit the data or to perform a data quality check in accordance with procedures to ascertain whether or not the container record should be input to the WDS system.

---

## Appendix E – Details for the Shipper/Generator Dashboard Functions

If the user is directed by procedure to perform evaluations when the container data are uploaded, the user may check the checkbox shown in Figure E-6. After checking the checkbox and selecting one of the two save options, the user presses the Upload Containers button.

**Figure E-6. Upload Containers Functionality: Perform Evaluations Submenu**

☒ Perform evaluations      Upload Containers

☐ Save without regard to status

☐ Do not save if fail

The user has the following options if the evaluation option is selected for sample only data:

- Save to database when evaluations FAIL.
- Do not save to database when evaluations FAIL.

---

### NOTE

If required data are not uploaded or there are insufficient data to enable the WDS to run the evaluations, the container data upload is unsuccessful, and the user receives an error message as shown in Figure E-7.

---

Options to correct container upload errors or problems: In the event of unsuccessful container upload, the user should recheck the spreadsheet or site database to verify that all required data fields have been correctly populated. After items that are identified as in need of correction have been addressed or it has been verified that all data fields are correctly populated on the spreadsheet, the user uploads the data again.

**Figure E-7. Upload Containers Functionality: Unsuccessful Data Upload**

WDS WASTE DATA SYSTEM

SUPER ADMIN USER, SUPER\_USER 2/9/2009 13:25 PM

DASHBOARD ACTION CENTER AD-HOC QUERY

Container [v] SEARCH

**DATA UPLOAD RESULTS**

Container: H-06\_MS Not Saved: User not authorized to upload containers for the supplied certification program

[Upload Additional Containers](#)

DASHBOARD | ACTION CENTER | USER PREFERENCES

INSTANCE: ts03.wipp.carlsbad.nm.us  
BUILD: WDS\_20090120f

When the container record is successfully uploaded, the user receives a message that the record was saved, as shown in Figure E-8. A link to the container data is provided.

Appendix E – Details for the Shipper/Generator Dashboard Functions

**Figure E-8. Upload Containers Functionality: Successful Data Upload**

The screenshot displays the WDS (Waste Data System) interface. At the top left is the WDS logo. The top right shows the user 'SUPER ADMIN USER, SUPER\_USER', the date '2/9/2009 13:39 PM', and buttons for 'HELP' and 'LOG OUT'. Below the logo is a navigation bar with 'DASHBOARD', 'ACTION CENTER', and 'AD-HOC QUERY'. A search bar with a 'Container' dropdown and a 'SEARCH' button is on the right. The main content area is titled 'DATA UPLOAD RESULTS' and shows 'Container: ARP017 MS' with status 'Saved' and 'Evaluation PASS'. A link 'Upload Additional Containers' is present. The bottom of the page has a navigation bar with 'DASHBOARD | ACTION CENTER | USER PREFERENCES' and a footer box with 'INSTANCE: ts03.wipp.carlsbad.nm.us' and 'BUILD: WDS\_20090120f'.

If the link to the container number is selected, the user can view the uploaded data as shown in Figure E-18.

# Waste Data System User's Manual

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### Appendix E – Details for the Shipper/Generator Dashboard Functions

#### NOTE

If the container data are successfully uploaded and saved, the data must be deleted if a change(s) to the spreadsheet is required to permit the user to correct errors for which there is no error message, such as reporting of >LLD to 0 on radionuclides.

Figure E-9. Upload Containers Functionality: Container Data Example

The screenshot displays the 'CONTAINER DATA REPORT' for container 'ARP017\_MS'. The report is categorized as 'Type: 16 - 55 GAL DRUM TO BE OVERPACKED - GOOD CONDITION'. It includes a 'Current Status' section indicating 'Pending Certification Data Approval' and a 'Waste Handling Code' of 'CH'. The report is divided into several sections: 'Evaluations' with checkboxes for 'TRAMPAC' and 'Edit Limit Checks'; 'Certification Data Values' listing various activity and contamination levels; 'Transportation Data Values' including dates and shipment details; 'Gas Generation Data Values' with a table of measured and truncated gas rates; and 'Filters' with a table of filter specifications.

CONTAINER DATA REPORT						
Type: 16 - 55 GAL DRUM TO BE OVERPACKED - GOOD CONDITION						
Current Location Site:	Neutron Dose Rate (mrem/hr):	1.0	FGE (g):	5.629E-1	Gross Weight (kg):	199.00
Generator Site:	Beta Gamma Dose Rate (mrem/hr):	0.5	FGE Uncertainty (g):	1.513E-1	Gross Weight Uncertainty (kg):	2.30
Destination Site ID:	Total Dose Rate (mrem/hr):	1.5	Poly Density <= 70%:		Decay Heat(W):	1.197E-3
Shipping Program ID:			Poly Density <= 20%:		Decay Heat Uncertainty (W):	1.000E-4
Certification Program ID:			Compacted?	N	Separation OK?	

Evaluations	
<input type="checkbox"/> TRAMPAC	<a href="#">View Latest Results</a>
<input type="checkbox"/> Edit Limit Checks	<a href="#">Execute Checks</a>

Certification Data Values	
Waste Stream Profile Code:	ID-SDA-SLUDGE
Waste Type Code:	MTRU
IDC Code:	NONE
Waste Matrix Code:	S3900
WAC Revision Number:	6.1
Fill Factor (%):	95.00
TRU Alpha Activity (Ci):	4.514E-2
TRU Alpha Activity Uncertainty (Ci):	1.250E-2
TRU Alpha Activity Concentration (Ci/g):	2.736E-7
PU239 Equivalent Activity (PE-Ci):	4.552E-2
Alpha Surface Contamination (dpm/cm <sup>2</sup> ):	19
Beta/Gamma Surface Contamination (dpm/cm <sup>2</sup> ):	199
PCB Waste?	N
PCB Mass (kg):	
PCB Concentration (ppm):	0
PCB Out of Service Date:	
Be Present?	
Be <= 1% by weight?	Y

Transportation Data Values			
Closure Date:	1/30/2008	Shipment Purpose	
Vent Date:	1/30/2008	Liner Exists?	Y
Process Knowledge?	N	Liner Hole Size (mm):	478
TRUCOH Code:	ID111J	Liner Lid Present?:	
Shipping Category:	1001600101	Aqueous Material?	N
Aspiration Method:	3		

Gas Generation Data Values			
Measured FGGR (mol/s)	Measured TGRR (mol/s)	Truncated FGGR Test Indicator	Truncated FGGR Test Period (days)

Filters			
Filter Model Number	Filter Diffusivity (mol/s/mf)	Quantity	Install Date
NF019D	1.85E-5	1	1/30/2008

The WDS provides the user the option to perform the applicable edit/limit check evaluation and the applicable TRAMPAC evaluation (certification and inter-site only) upon upload. The applicable edit/limit check evaluations are as follows:

- Characterization - WAP, container characterization data integrity evaluations
- Certification - WAP, WAC, DSA, container certification data integrity evaluations
- Inter-site shipment - Data Integrity Essential Data Elements and Data Integrity TRAMPAC data. The applicable TRAMPAC evaluations are based on container handling code and container type code.

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If for diagnostic purposes the user checks the TRAMPAC Evaluation checkbox, the WDS provides a summary of the CHTES results as shown in Figure E-10. For container data uploaded for the first time for inter-site shipment, the WDS sets the container status to pre-submittal certification and records the insertion into the database in the container status history table.

**Figure E-10. Upload Containers Functionality: Edit Limit Check Evaluation**

<b>TRAMPAC</b>	
<b>Evaluation Date:</b> Mon Feb 9 13:38:26 MST 2009	
<b>Overall Status:</b> PASS	
<b>Results</b>	
Evaluation Code	Status
CE_ACT	PASS
CE_ALL	PASS
CE_ASP	PASS
CE_DDH	PASS
CE_FGE	PASS
CE_FIL	PASS
CE_GVE	PASS
CE_RDR	PASS
CE_TRU	PASS
CE_VVGT	PASS
<b>Return Codes</b>	
Return Code	Description

If for diagnostic purposes the user checks the Edit/Limit Checks Evaluation checkbox, the WDS provides a summary of the results as shown in Figure E-11.

**Figure E-11. Upload Containers Functionality: Edit Limit Check Evaluation**

<b>Edit Limit Check Results</b>	
<b>Evaluation Date:</b> Mon Feb 9 13:38:25 MST 2009	
<b>Overall Status:</b> FAIL	
<b>Results</b>	
Evaluation Code	Status
DI_CERT_ED	FAIL
<b>Return Codes</b>	
Return Code	Description
DI_ED_CUR	The Current Location ID is null or invalid.
DI_ED_DPN	The Destination Program ID is null or invalid.
DI_ED_SPUI	The Shipping Purpose is null or invalid.

## E.4 Dunnage Containers

To create dunnage containers, the user selects the Dunnage Container Data Entry icon from the Functions tab. The form for entering and selecting dunnage container information is displayed as shown in Figure E-12.

## Appendix E – Details for the Shipper/Generator Dashboard Functions

**Figure E-12. Dunnage Container Form**

The screenshot shows the WDS (Waste Data System) interface. At the top left is the WDS logo. At the top right, it displays the user 'STRUM, MIKE', the date '9/20/2009 7:22', and a 'LOG OUT' button. Below the logo are two tabs: 'DASHBOARD' and 'AD-HOC QUERY'. The main content area is titled 'DUNNAGE CONTAINER DATA ENTRY'. It features a search bar with a magnifying glass icon and a dropdown menu labeled 'Container'. To the right of the search bar are four buttons: 'NEW', 'COPY & CREATE', 'SAVE', and 'DELETE'. Below the search bar is a form with four fields: 'Dunnage Container Number' (with an 'EDIT' button), 'Container Number', 'Current Location' (a dropdown menu), 'Shipping Program' (a dropdown menu), and 'Container Type' (a dropdown menu). At the bottom left, there are links for 'DASHBOARD' and 'USER PREFERENCES'. At the bottom right, a box displays 'INSTANCE: tst03.wipp.carlsbad.nm.us' and 'BUILD: WDS\_20090918'.

To create a new dunnage container record, the following steps are recommended:

- Step 1: Enter a unique container number in the Container number block.
- Step 2: Select the Current Location (Site ID) from the dropdown menu.
- Step 3: Select the Shipping Program (Site ID) from the dropdown menu.
- Step 4: Select the container type from the dropdown menu.
- Step 5: Save the dunnage record using the Save button.

---

### NOTE

As an alternative to using the steps listed above, the user may use the Copy & Create function to duplicate an existing dunnage container.

---

The user exits the dunnage container screen by selecting the Dashboard button. Dunnage containers entered into the WDS will appear in the list of containers on the payload screen.

---

### NOTE

Dunnage drums do not need to be created for placement into SWB Overpacks or TDOPs. For example, if three waste drums are to be shipped in an SWB, WDS automatically accounts for the fourth drum as a dunnage drum.

---

The number of dunnage containers allowed in an RH canister is specified in the approved content code. If dunnage is placed in a canister, the type and quantity must match as specified in the content code.

## Appendix E – Details for the Shipper/Generator Dashboard Functions

The user may delete the data for the displayed dunnage container if it is not assigned to a payload.

### **E.5 Data Entry for Inner Cans in RH Waste Containers**

The RHTES will mathematically evaluate the can layer depth and quantity of cans at each layer against the specification outlined in the content code associated with the drum (when cans are placed in drums) or the canister (when cans are placed directly in the canister).

The database will allow input of data for inner cans that have RH waste packaged directly into the can, as well as input of inner cans (Parent Cans) that have smaller cans (Inner Cans) nested inside of them.

A unique Can ID number must be entered for each can inside the waste container. The Can ID number must be an alphanumeric value up to 16 characters. The Can ID must be unique for the Site ID and cannot be the same as any existing container number for the same Site ID. If the can is nested inside another can, the Can ID number of the exterior can is entered as the Parent Can ID for the interior can.

---

#### **NOTE**

If submittal of an RH waste container with inner cans is unsuccessful, the user performs a check of the data form or spreadsheet to verify that all can numbers are unique and correct. The cans may be removed from the WDS data form when necessary, but only when the container record is at pre-submittal status. If it can be verified that the can numbers are correct, the user performs a check to ensure that no limitations imposed by the approved TRUCON Code have been exceeded and verifies that decay heat data, closure and vent dates, and filter diffusivity values have been entered correctly. If it is found that any Can ID numbers are not unique, or if any values are incorrect, the user changes the incorrect value to the correct value and attempts to resubmit the container data. Container data can be successfully submitted when the correct data have been entered into the container record. The user should contact the Payload Engineer if containers cannot be successfully submitted.

---

---

#### **NOTE**

Additional information about data interfaces with approved Content Codes in the RTMA must be obtained from the Payload Engineer.

---

Appendix E – Details for the Shipper/Generator Dashboard Functions

Figure E-13. Manual RH Canister Planning and Completion Form

WDS WASTE DATA SYSTEM

STRUM, MIKE 9/20/2009 16:21 LOG OUT

DASHBOARD AD-HOC QUERY

Container [v] SEARCH

MANUAL CANISTER PLANNING & COMPLETION NEW SAVE DELETE ACCEPT SUBMIT

Canister Plan ID: [ ] Plan Insert User: [ ] Plan Creation Date Between [ ] and [ ]

Canister #: [ ] SEARCH CLEAR SEARCH

Canister Information

Canister Plan ID

Canister Configuration Type [v]

Certification Program ID [v]

Current Location [v]

Destination Site ID [v]

Shipping Program ID [v]

Waste Stream Profile Code [v]

SEARCH

Canister Summary

Total FGE + 2 x RSS FGE error (g)

Total Gross Weight + RSS Gross Weight error (kg)

Non-dose Dependent Decay Heat Limit (W)

Dose Dependent Decay Heat Limit (W)

Be Present

Be <=1%

Be chemically/mechanically bound

Evaluations

☐ RHTES View Latest Results

Execute Checks

Inner Containers

Container Number	Gross Weight + Error (kg)	FGE + 2X Error	Content Code	Decay Heat + Error(W)	Decay Heat Limits (W) Dose	Decay Heat Limits (W) Non-Dose
------------------	---------------------------	----------------	--------------	-----------------------	----------------------------	--------------------------------

Candidate Container Query

Weight > [ ] FGE > [ ] Decay Heat > [ ] Content Code [ ]

Weight < [ ] FGE < [ ] Decay Heat < [ ] SEARCH

Candidate Containers

Pre Submittal Pending Approved

Container Number	Gross Weight + Error (kg)	FGE + 2X Error	Content Code	Decay Heat + Error (W)	Decay Heat Limits (W) Dose	Decay Heat Limits (W) Non-Dose
------------------	---------------------------	----------------	--------------	------------------------	----------------------------	--------------------------------

## E.6 Manual Canister Planning

Access to all canister data entry functions is restricted to the Shipper/Generator user group. The WDS allows the user to create a new canister plan. When a new canister plan is initiated, the WDS assigns and displays in non-updateable format a unique ID for the canister plan. The WDS allows the user to query saved canister plans by insert user, creation date, and wildcard on plan ID.

The user can copy or reconfigure a saved canister plan by updating the following fields: canister container type, certification program ID, current location, destination site ID, shipping program ID, and waste stream profile code.

The payload containers associated with the canister plan and the three assigned container fields for the canister plan are displayed along with available canister



## Appendix E – Details for the Shipper/Generator Dashboard Functions

container candidates that meet the criteria selected for planning purposes. The planning criteria are canister container type, current location, certification program ID, destination site ID, shipping program ID, content code, waste stream profile code. Inner containers cannot be currently assigned to a canister or canister plan, and must be a "to-be-overpacked" container type.

The WDS displays the following data fields for each candidate payload container:

- Container ID
- Gross weight (kg)
- Gross weight error (kg)
- FGE (g), 2xFGE error (g)
- Content code
- Decay heat (W)
- Decay heat error (W)
- Content code decay heat limit (dose and non-dose dependent values)

The WDS allows the user to sort the payload container candidates or payload containers assigned to the payload plan by each of the displayed container data fields. The default sort order is by container ID.

The WDS allows the user to limit the payload container candidates to those that meet user-specified criteria:

- Content code value
- FGE > value
- FGE < value
- Gross weight > value
- Gross weight < value
- Decay heat > value
- Decay heat < value

The user may add and remove placeholder dunnage in a canister plan. The canister summary information is updated as each payload container or dunnage container is added or removed. The summary information includes running sums for Total FGE + 2 x RSS FGE error, most restrictive dose-dependent decay heat limit, most restrictive non-dose dependent decay heat limit, Be present, Be  $\leq 1\%$  by weight, Be chemically/mechanically bound, and Total Gross Weight + RSS Gross Weight Error.

Functionality allows the user to save the canister plan. Upon save, the WDS will roll-up the inner container data for the canister plan according to the applicable RH overpack roll-up rules specified elsewhere.

## Appendix E – Details for the Shipper/Generator Dashboard Functions

---

### **NOTE**

The displayed screen data will be rolled up as the composition is altered, but the underlying data (such as hazardous codes) will be rolled up when the user saves.

---

If fewer than three drums are associated with the canister plan, the WDS notifies the user that the remaining drums are assumed to be dunnage.

The WDS will execute and display the status of the RHTES 72-B Canister evaluation for the canister plan if the canister plan has one or more assigned payload containers. The following RHTES results data will be displayed:

- FGE Limit (g), Closure Time
- Matrix-Depletion Applied flag, Sum of Headspace VOCs (ppm)
- Bounding Sum of Headspace VOCs (ppm)
- For each returned confinement result: Layer ID, layer type description, decay heat + error (from input data, in W), decay heat limit (W), FGGR (mol/s), Allowable FGGR (mol/s)

A non-accepted canister plan can be deleted. Upon deletion, the WDS disassociates all assigned payload containers from the canister plan.

### **E.7 Overpack - Canister Completion**

The WDS allows the user to assign a container number to a canister plan and accept a canister plan configuration. Upon acceptance of a canister plan configuration, the WDS verifies that the entered container number is unique. If the container number is not unique, the WDS rejects the canister plan.

Upon acceptance of a canister plan configuration, the WDS executes the RHTES 72-B Canister evaluation for the canister plan. If the canister plan fails one or more of the following RHTES 72-B Canister evaluation, the WDS disallows acceptance of the canister plan. The evaluation includes:

- Venting and Aspiration (CANISTER\_72B\_ASP)
- Content Code (CANISTER\_72B\_CONT)
- Flammable Gas/VOC (CANISTER\_72B\_GVE)
- Nuclear Criticality (CANISTER\_72B\_NUC)
- Packaging Decay Heat (CANISTER\_72B\_PDH),
- Weight (CANISTER\_72B\_WGT)

The WDS allows the user to view the most recent canister-level TRAMPAC results.

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If the canister plan passes the applicable TRAMPAC software evaluation outlined in Appendix A of this manual, or if the TRAMPAC software evaluation does not apply, the WDS saves the canister container record, records the insertion of the canister into the database in the container status history table, associates the inner containers to the canister container record, records the assignment of each container to a canister in the container status history table, and performs a roll-up the inner container data for the canister plan according to the applicable RH overpack roll-up rules specified in Appendix A of this manual.

The user can generate a canister build list in PDF or comma separated value (CSV) format for a successfully accepted canister plan. The canister build list shall include the date and time it was generated and the following data:

- Canister container number
- Filter model numbers and quantity
- Total gross weight + error (lb and kg) and the following data for each container assigned to the canister:
  - Gross weight + error (lb and kg)
  - Total dose rate (neutron dose rate plus beta/gamma dose rate)
  - Waste stream profile
  - Content code

The user can access the certification data entry function to enter the following canister data fields:

- Filter record(s)
- Material Parameter record(s)
- Neutron dose rate (mrem/hr), beta/gamma dose rate (mrem/hr)
- Closure date, vent date
- Certification date, WAC Revision number
- Gross Weight + error
- Alpha surface contamination (dpm/100cm<sup>2</sup>) and beta/gamma surface contamination (dpm/100cm<sup>2</sup>)
- Shipping Purpose
- U-235 FEM, U-235 FEM error

The user can access the certification data submittal function for the canister record.

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The user can edit the container number of an accepted canister record. The WDS verifies that the edited container number is unique before saving the change. If the container number is not unique, the WDS will disallow the save. The user can reconfigure the canister plan associated with an accepted canister record, if the canister is in pre-submittal status. The user can delete a canister record that is not DA approved or assigned to a payload or payload plan. Upon deletion of a canister record, the WDS shall delete the associated canister plan, all payload container associations, and the canister record from the database, and shall record the removal of each container from the canister in the container status history table.

### E.8 Overpack Planning

Figure E-14. Overpack Planning – Manual Overpack Planning Form

The screenshot displays the 'MANUAL OVERPACK PLANNING & COMPLETION' form in the WDS interface. At the top, the WDS logo and user information (STRUM, MIKE, 9/20/2009 16:25) are visible. The form is divided into several sections:

- Overpack Information:** Contains fields for Overpack Plan ID, Overpack Configuration, Certification Program ID, Current Location, Destination Site ID, Shipping Program, and Waste Stream Profile Code. A 'SEARCH' button is located at the bottom of this section.
- Overpack Summary:** A table showing calculated values: Total FGE + 2 x RSS FGE error (g), Total Gross Weight + RSS Gross Weight error (kg), Total PE-Ci, Governing Shipping Period (days), PCB present, TAAC (Ci/g), Be Present, and Be <= 1%.
- Inner Containers:** A table with columns: Container Number, Weight + Error (kg), FGE + 2X Error, TRUCON Code/Shipping Category, Ship Period (days), PE-Ci, TAAC (Ci/g), PCBs Present, Be > 1%, FGGR, and AFGC.
- Candidate Container Query:** A section with search criteria: Weight > [ ], Weight < [ ], FGE > [ ], FGE < [ ], FGGR > [ ], FGGR < [ ], and TRUCON Code [ ]. A 'SEARCH' button is present.
- Candidate Containers:** A table with columns: Container Number (with a dropdown arrow), Weight + Error (kg), FGE + 2X Error, TRUCON Code/Shipping Category, Ship Period (days), PE-Ci, TAAC (Ci/g), PCBs Present, Be > 1%, FGGR, and AFGC. Above the table are status filters: Pre Submittal, Pending, and Approved.

After the user has successfully uploaded and submitted the container data for waste containers to be overpacked, the user may assemble the submitted containers into

## Appendix E – Details for the Shipper/Generator Dashboard Functions

overpacks. The manual overpack planning form is shown in Figure E-14. The WDS will display available overpack container candidates that meet the criteria selected for overpack container type, current location, certification program ID, destination site ID, shipping program ID, and waste stream profile code; that are not currently assigned to an overpack or overpack plan; and that are assigned a "to-be-overpacked" container type. Alternatively, the user may click the link to access the automated planning assistant. The following steps are recommended for creating an overpack. All data fields should be populated prior to submittal of the overpack.

- Step 1: To create a unique Overpack Plan ID, select the New button at the top of the form. The number is generated by the WDS and will automatically appear on the form.
- Step 2: Select the Overpack Configuration from the dropdown list. When a selection is made, the WDS limits the number of overpack plan assigned container fields to the maximum number of allowable containers per overpack container type.
- Step 3: Select the Certification Program (from which the overpack container(s) will be certified prior to shipment) from the Certification Program ID dropdown list.
- Step 4: Select the waste location Site ID from the Current Location dropdown list.
- Step 5: Select waste destination Site ID from the Destination Site ID dropdown list.
- Step 6: Select the shipper's Site ID from the Shipping Program ID dropdown list.
- Step 7: Select the waste stream profile number that applies to all waste containers in the overpack from the Waste Stream Profile dropdown list.

---

### **NOTE**

If dunnage is included in the Overpack, the WDS enters the correct number of dunnage containers into the form. No action is required from the user to create dunnage containers. If the plan contains fewer than the maximum number of drums for overpack container type, the WDS notifies the user that the remaining drums are assumed to be dunnage.

---

- Step 8: When payload container selection is complete, the user presses the Save button at the bottom of the form.

After the Save button is pressed, another screen will appear showing additional data fields that must be manually populated.

The WDS allows the users to filter overpack candidate containers using one or more of the following criteria:

- TRUCON code
- Maximum weight value

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- Minimum weight value
- Maximum FGE
- Minimum FGE
- Maximum FGGR
- Minimum FGGR

The WDS displays the following data fields for each candidate overpack container:

- Container ID
- Gross weight (kg)
- Gross weight error (kg)
- FGE (g)
- 2xFGE Error (g)
- TRUCON Code
- Shipping category
- Shipping period (days)
- PE-Ci
- TRU alpha activity concentration (Ci/g)
- PCBs present
- Be >1%
- FGGR, in mol/s
- Allowable flammable gas concentration (AFGC, in mole fraction)

The candidate containers assigned to the overpack plan may be sorted by each of the displayed container data fields. The default sort order shall be by container ID. The user may add and remove candidate containers from an overpack plan. Overpack summary information is updated and displayed as each candidate container is added or removed. The summary information must include running roll-ups as follows:

- Total FGE + 2 x RSS FGE error
- Total Gross Weight + RSS Gross Weight error
- Be present
- Be <1% by weight
- Total PE-Ci
- Governing shipping period
- PCB present
- TRU Alpha Activity Concentration

The WDS will execute the CHTES overpack evaluation for the overpack plan if the plan has one or more assigned inner containers and there are no containers in the overpack plan designated for manual transportation checks. An error message is displayed if a overpack plan containing one or more containers designated for manual transportation checks is submitted to the TRAMPAC evaluation. The flammability index returned by the TRAMPAC evaluation will be displayed for each container in the overpack plan. The status of the TRAMPAC evaluation will be displayed and provide access to the detailed overpack-level TRAMPAC results. A rejected overpack plan may be deleted.

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Upon deletion, the WDS disassociates all assigned overpack candidate containers from the overpack plan. The user may query saved overpack plans by insert user, creation date, and wildcard on the plan ID.

#### NOTE

The user can manually change data in other populated fields on the form, as necessary.

- The user may reconfigure the overpack plan associated with an accepted overpack record, if the overpack is in pre-submittal status. If the plan contains fewer than the maximum number of drums for overpack container type, the WDS notifies the user that the remaining drums are assumed to be dunnage.

**Figure E-15. Overpack Assistant**

WDS WASTE DATA SYSTEM

STRUM, MIKE LOG OUT

9/20/2009 16:28

DASHBOARD AD-HOC QUERY

Container SEARCH

OVERPACK ASSISTANT

Overpack Information

Overpack Container Type

Certification Program ID

Current Location

Destination Site ID

Shipping Program

Container Number

Include Dunnage? Y

Allow Payload Management for TAAC? Y

SEARCH

Candidate Containers

Pending Approved

Consider All Exclude All

Container Number	Weight + Err (kg)	FGE + 2xFGE Err (g)	TRUCON Code/Shipping Category	Ship Period (days)	PE-Ci	TAAC (nCi/g)	PCBs Present	Be > 1%	FGGR	AFGC	Force	Consider	Exclude
------------------	-------------------	---------------------	-------------------------------	--------------------	-------	--------------	--------------	---------	------	------	-------	----------	---------

CREATE OVERPACKS

DASHBOARD | USER PREFERENCES

INSTANCE: tst03.wipp.carlsbad.nm.us  
BUILD: WDS\_20090918

The overpack assistant can create the maximum number of possible TRAMPAC compliant overpack plans that meet the selected user criteria (available for WIPP

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destination site only). The overpack assistant creates overpacks according to the following rules:

- Waste stream profile codes of overpack inner containers must be equal.
- Destination site of overpack inner containers must be equal.
- Overpack PE-Ci limit must be met.
- TRU Alpha Activity Concentration minimum must be exceeded.

The user is required to specify values for overpack container type, current location, and certification program ID prior to enabling the overpack assistant.

The group of available overpack container candidates is defined as those containers that meet the criteria selected for overpack container type, certification program ID, shipping program ID, current location, and destination site; containers that are not currently assigned to an overpack or overpack plan; containers that are in Pending Certification Data Approval status or Certification Data Approved status; and containers that are assigned a "to-be-overpacked" container type.

Containers that are assigned a special case TRUCON Code (LA154 and SQ154 series) are excluded from the group of available overpack container candidates.

The WDS allows the user to limit the candidates by container number using wild card(s). The user can indicate whether payload management for TRU alpha activity concentration is allowed, and can select one or more containers to force into an overpack plan. A list of the resulting overpack plans is displayed, along with a list of the candidate containers that were not associated with overpack plans by the overpack assistant (as applicable). The user can access the manual overpack planning function for each of the overpack plans returned by the overpack assistant.

When the overpack plan is complete, the user assigns a container number to the overpack plan and accepts the overpack plan configuration. The WDS then checks the entered container number for uniqueness. If the container number is not unique, the WDS rejects the overpack plan. Upon acceptance of an overpack plan configuration, the WDS executes the CHTES overpack evaluation for the overpack.



## Appendix E – Details for the Shipper/Generator Dashboard Functions

---

### **NOTE**

If one or more containers in the overpack plan are designated for manual transportation checks, the transportation compliance is determined external to the WDS and compliance can be recorded in the WDS after overpack completion.

---

If the overpack plan fails the TRAMPAC overpack evaluation, the WDS rejects the overpack plan. If the overpack plan passes the TRAMPAC software evaluation, or if the TRAMPAC software evaluation does not apply, the WDS:

- Saves the overpack container record
  - Records the insertion of the overpack into the database in the container status history table
  - Associates the inner containers to the overpack container record
  - Records the assignment of each container to an overpack in the container status history table
  - Rolls up the inner container data for the overpack plan according to the applicable overpack data roll-up rules specified in Appendix A of this manual.
- 

### **NOTE**

The CHTES results data for Governing Shipping Period, FGE Limit is displayed.

For each inner container, the container compliance method, FGGR (mol/s), allowable FGGR (mol/s) in context of the overpack, allowable flammable gas concentration (mol fraction), and flammability index are displayed.

---

The user can generate an overpack build list in PDF or CSV format for an accepted overpack plan. The overpack build list includes the date and time it was generated and the following data for the overpack:

- Overpack container number
- Filter model numbers and filter quantity
- Total gross weight + error in lb and kg
- PCB waste flag
- Be present
- Total dose rate (neutron dose rate + beta/gamma dose rate)
- Waste Stream Profile
- TRUCON Code

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The user has access to the certification data entry function to enter the following overpack data fields:

- Filter record(s)
- Neutron dose rate (mrem/hr), beta/gamma dose rate (mrem/hr)
- Closure date, vent date
- Certification date, WAC revision number
- Gross Weight + error
- Alpha surface contamination (dpm/100cm<sup>2</sup>) and beta/gamma surface contamination (dpm/100cm<sup>2</sup>)
- Shipping Purpose

The user can access the certification data submittal function for the overpack record and reconfigure the overpack plan associated with an accepted overpack record, if the overpack is in pre-submittal status. The user can delete an overpack record that is not DA-approved or assigned to a payload or payload plan. Upon deletion of an overpack record, the WDS deletes the associated overpack plan, all inner container associations, and the overpack record from the database, and records the removal of each container from the overpack in the container status history table.

### **E.9 Payload Planning**

After the user has successfully uploaded and submitted the container data for waste containers to be shipped, the user may assemble the waste containers into payloads. The payload planning screen is shown in Figure E-16.

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**Figure E-16. Payload Planning Form Example**

The following steps are used to create the payload:

Step 1: Press the New button. A payload plan ID number is automatically generated and inserted into the Payload Plan ID # block.

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Step 2: From the dropdown list, select the Packaging Type and Payload Container Type of the container(s) to be shipped.

Step 3: From the Current Location ID dropdown list, select the Current Location ID.

Step 4: From the dropdown list, select the destination site.

---

### **NOTE**

If the payload is for an inter-site shipment, WIPP (Site ID - WI) should not be selected as a destination site.

---

Step 5: From the dropdown list, select the Shipping Program ID.

Step 6: Select the container(s) to be included in the payload from the list of Available Containers by checking the checkbox(es). When the containers have been selected, press the Add button at the bottom of the form and select either Save or Accept, then Submit.

Step 7: If dunnage is to be included in the payload, enter the correct number of dunnage containers into the appropriate block on the form.

---

### **NOTE**

It is extremely important that the user insert the correct number of dunnage containers to be included in the payload. For example, if the user selects a TRUPACT-II as the Package Type and includes seven drums with 0 dunnage (or less than 7 dunnage), WDS will reject the payload.

---

After the initial data entry steps have been completed, the containers associated with the payload are shown and the user has the option to remove one or more containers. An option to run the TRAMPAC checks for the payload is available if the user is not ready to submit the payload. When the Save button is pressed, the payload becomes available for display in the dropdown list in the top right corner of the form. After the overpack is submitted, links to the PCTCD and OPCTCD, if applicable, and the PATCD appear on the screen. The user may print and review the documents.

If the payload plan passes the applicable TRAMPAC evaluation, or if the TRAMPAC evaluation does not apply, the WDS saves the payload record and divides the payload into assemblies according to the following rules:

- The number of assemblies and number of payload containers within each assembly is based on the package type and payload container type.
- If the payload configuration contains two assemblies, the WDS places the heaviest payload containers in the bottom assembly.

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Upon acceptance of the container assembly assignment, the WDS verifies for each CH drum assembly in the payload that the summed FGE (including RSS) for the assembly does not exceed the DSA FGE limit (see WIPP DSA Chapter 6, CH Drum Assembly Limits). If the limits are met, the WDS records the container assembly associations to the database, updates the destination ID for each dunnage container in the payload, records the assignment of each container to a payload in the container status history table, associates the assembly records with the payload record in the database, and assigns the Complete status to the payload record.

The user may use one or more containers from the approved payload in another payload by deleting the payload. All of the containers will then be made available for assignment to other payloads.

Saved payload plans may be queried by insert user, by creation date, and by wildcard on the plan ID. Payload container candidates may be limited to those that meet user-specified criteria:

- For CH payloads: TRUCON Code value,  $FGE + 2 \times \text{error} > \text{value}$ ,  $FGE + 2 \times \text{error} < \text{value}$ , gross weight + error > value, gross weight + error < value, FGGR < value, FGGR > value, shipping period value, PCB waste flag.
- For RH payloads (72-B): content code value,  $FGE > \text{value}$ ,  $FGE < \text{value}$ , gross weight > value, gross weight < value, decay heat > value, decay heat < value.

The user can generate a payload build list in PDF or CSV format for payloads in Complete status. The payload build list contains the payload ID, the assembly ID(s), and the payload container(s) assigned to each assembly within the payload, along with each payload container gross weight + gross weight error, shipping period, PCB waste flag, and Be present flag.

### **E.10 Shipment Planner**

This section describes the initial data entry steps to create a new shipment and the steps to assemble approved payloads into a shipment. When the user selects Shipment from the main menu, a blank form will appear on the screen as shown in Figure E-17. When a shipment has been created, it may be saved. When additional data become available, they may be added to the shipment record.

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Figure E-17. Shipment Form

**WDS WASTE DATA SYSTEM**

STRUM, MIKE 9/20/2009 16:40 **LOG OUT**

**DASHBOARD AD-HOC QUERY**

Container  **SEARCH**

**SHIPMENT DATA ENTRY**

**NEW SAVE**

**Shipment Number**  **SEARCH**

Shipment Status: **NEW\_SHIP** DA Review Status: ☐ Confirmed Status: ☐ Finalized: ☐

**Reports**

**General Information**

Shipment Number:  Governing Shipping Period: 60 Shipment Limited Due To: ☐ Weight ☐ Gas Gen ☐ FGE ☐ Other

Current Location:  Transporter:

Destination Site ID:  Tractor ID:

Shipping Program ID:  Trailer ID:

Manifest:  Comments:

Send Date:

**Evaluations**

**View Latest Results**

Package 1 Weight: 0 kg Tractor Weight: 9008.00 kg Total Shipment Weight: 16447.00 kg

Package 2 Weight: 0 kg Trailer Weight: 7439.00 kg Total Shipment Container Weight: 0.00 kg

Package 3 Weight: 0 kg Max Shipment Weight: 16447.00 kg

Kilograms ☒ Pounds ☐

**Shipment Payloads**

**Shipment Payload Totals**

Payload ID	Package Weight (kg)	Payload Weight + Err (kg)	FGE + 2X FGE Err	Decay Heat + Err (W)	PE-CI	PCBs Present	Governing Shipping Period (days)
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**Available Payloads**

**Approved Pending SEARCH**

Payload ID	Governing Ship Period	PCBs Present	Package Type	Payload Weight + Err (kg)	FGE + 2X Err	Decay Heat + Err (W)	PE-CI
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**DASHBOARD | USER PREFERENCES**

INSTANCE: test03.wipp.carlsbad.nm.us  
BUILD: WDS\_20090918

The following steps should be used to create the shipment:

- Step 1: Enter a shipment number into the Shipment Number block. The shipment number is generated by the user, not the WDS.
- Step 2: Select a Shipping Program ID from the Shipping Program ID dropdown list.
- Step 3: Select a Current Location from the Current Location dropdown list.
- Step 4: Select a Destination Site ID from the Destination Site ID dropdown list.

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Step 5: Select the payload(s) to be included in the shipment from the list of Available Payloads by selecting the Plus button on the form.

---

**NOTE**

If at least one available payload is not selected and associated with a shipment, the user receives an error message indicating that no payloads have been selected.

---

After the payload has been added to the shipment, the links to the Transportation Reports become available for viewing and printing. Users should note that the option exists to run the TRAMPAC checks for the shipment. If the TRAMPAC checks are run before the contact dose rate data are entered, the user receives an error message that the shipment failed the TRAMPAC checks. Users are advised to input all of the additional shipment data to this form before running the TRAMPAC checks or printing transportation reports. The following steps should be used to complete the shipment form:

- Step 6: From the dropdown list, select the Package Number that will be used to transport the trailer and packages associated with the shipment. Note that if a payload has been designated as a HalfPACT payload, then only HalfPACT package numbers will appear in the dropdown list. If the payload is designated as a TRUPACT payload, then only TRUPACT package numbers will appear on the list.
- Step 7: Enter the OCA Lid Number in the appropriate block on the form.
- Step 8: From the dropdown list, select the shipment Transporter, either CAST or VISIONARY SOLUTIONS.
- Step 9: From the dropdown list, select the Tractor Number that will be used to transport the trailer and packages associated with the shipment.
- Step 10: From the dropdown list, select the Trailer Number that will be used to transport the packages associated with the shipment.
- Step 11: Enter the Manifest Number into the Manifest Number Field.
- Step 12: Enter the ICV Closure Date and Time in the appropriate block on the form. Enter the information directly into the block, or use select it from the calendar next to the block. When the calendar is used, the current time is entered automatically. Closure Time that is entered automatically may be manually changed, as necessary. Note that if the reported ICV closure date is later than the reported send date, the database will reject the send date.
- Step 13: Enter the measured contact dose rate. The limit is <200 mrem/hr. If the reported dose rate exceeds the limit, the shipment will not pass the TRAMPAC

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checks and the user will receive an error message that the limit has been exceeded.

Step 14: Enter the measured dose rate at 2 meters from the package. The limit is <10 m/hr. If the reported dose rate exceeds the limit, the shipment will not pass the TRAMPAC checks and the user will receive an error message that the limit has been exceeded.

Step 15: The WDS automatically populates the Handling Material Weight and Handling Material Weight Uncertainty values. The user can manually change these values if necessary. Handling Material weights must be entered in kg. Typical default values in kg can be obtained from the WDS Container Types Reference Table.

Step 16: Enter the dose rate at 1 meter from the package, alpha surface contamination, and beta surface contamination for each payload.

Step 17: Select the physically built checkbox, check RQ and HRCQ flags, as appropriate, and select appropriate DOT description from the dropdown menu.

Step 18: Enter the Send Date and Time

---

### **NOTE**

The send date and time can be left blank when all additional fields have been populated and after the shipment has been submitted and approved. Date and time may be entered electronically by using the calendar next to the block.

---

When all required data fields are populated and all approved payloads are associated with a shipment, the user selects the Finalize option from the shipment submenu. If the shipment passes all edit/limit checks, the database provides the user with an automated shipment submittal notification. Upon successful save of a shipment that has not previously been saved, the shipment record is set to new shipment status and the insertion is recorded in the shipment status history table. If the shipment passes the preliminary shipment edit/limit check evaluation, the WDS sets the shipment status to In Review, sends an email to the Confirmation Team distribution list stating that the shipment is ready for confirmation review (WIPP destination site only), and sends an email to the DA distribution list stating that the shipment is ready for DA review (WIPP destination site only).

When a shipment has been updated to reflect one of the following statuses, the WDS updates the shipment to Complete status if all applicable statuses have been achieved:

- Shipment data have been finalized
- Shipment has been confirmed (WIPP destination site only)
- Shipment has DA approval (WIPP destination site only)



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When the shipment status is updated to complete, and the shipment destination site is WIPP, the WDS sends a Shipment Notification email to the user who created the shipment, and to the distribution list for the final report.

The WDS allows the DA to reset shipment status to New Shipment for an active shipment if it is in "In Review" status and has not been confirmed. If the shipment had been approved, the WDS removes the DA approval and sends an email to the confirmation team distribution list stating that the shipment is no longer available for confirmation review (WIPP destination site only).

### E.11 Inter-Site Shipment Receipt

Access to the Inter-Site Shipment Receipt function is restricted to users in the Shipper/Generator user group. This section describes the steps necessary to receive an inter-site shipment. When the user selects Shipment Receipt from the main menu, the form shown in Figure E-18 will appear on the screen.

**Figure E-18. Shipment Receipt**

The screenshot shows the WDS (Waste Data System) interface. At the top left is the WDS logo. To the right, the user is logged in as 'STRUM, MIKE' on '4/30/2009 13:12 PM'. There are 'HELP' and 'LOG OUT' buttons. Below the login information are three tabs: 'DASHBOARD', 'ACTION CENTER', and 'AD-HOC QUERY'. The 'ACTION CENTER' tab is selected. Below the tabs is a search bar with a 'Container' dropdown and a 'SEARCH' button. The main content area is titled 'SHIPMENT RECEIPT'. It contains a table with two columns: 'Shipment' and 'Receipt Date'. The 'Shipment' column has a value 'SHIP\_030'. The 'Receipt Date' column has a date picker. A 'save' button is next to the date picker. At the bottom of the form, there is a footer with links to 'DASHBOARD', 'ACTION CENTER', and 'USER PREFERENCES'. On the right side of the footer, there is a box containing the text 'INSTANCE: tst03.wipp.carlsbad.nm.us' and 'BUILD: WDS\_20090429'.

The form shows a list of shipments in En Route status with a destination site other than WIPP. The user may click the link for access to the shipment data (via the General Shipment Report) for each shipment on the list or for the shipment to be received. The user may use the calendar function to enter a receipt date/time in the Receipt Date block. When Save is selected, the WDS verifies that the Receipt Date is populated with a non-null value, including a non-zero time component that is on or after the Send Date and not later than the current date. If the date fails the verification, the receipt date is not saved and the shipment status is not updated. When a valid receipt date is saved, the WDS sets the shipment status to Shipment Received and records the shipment receipt in the shipment status history table.